The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. LXII, No. 19 CHICAGO, ILLINOIS MAY 9, 1914

THE MEDICAL DEPARTMENT IN THE CIVIL WAR *

S. WEIR MITCHELL, M.D.†
PHILADELPHIA

I propose to deal briefly with the place our great profession held morally and technically in the war of the sixties. It is a record to be proud of, or I should not so willingly revert to it. If you look for that story in the histories, they are silent; if you search for it in the countless autobiographies of soldiers great or small, these too are mute except as to what the soldier did. A few forgotten books by surgeons are personal or technical, and tell us little more than the baldest story of the individual. What else there is may be found scattered through the huge volumes on the medical history of the war. We gain nowhere a sense of the immensity of the task which as a profession we dealt with. We hear little or nothing of the unequaled capacity with which we met the call on energy and intelligence, or of the extraordinary power of the trained American to deal with the unusual. Of course, as individuals, we took our sides North or South, but the attitude of the profession as a whole was peculiar, and to deal with it properly involves some brief preconsideration of the national feeling in regard to an unbroken Union.

One of the privileges of age is the ownership of a library of personal memories. Time occasionally borrows them as material books are borrowed, and does not return them; but enough are left to enable me to take down half-forgotten volumes from the shelves of remembrance and with their aid talk to you—even gossip for you—concerning the share we took in what some of us old fellows who are still unreconstructed call the "War of the Rebellion." Indeed, it is technically so named in our war histories; but to forget a little were wise and kindly considerate. Mr. Lincoln once reproved a general for calling the soldiers of the South *Rebels*. He said, "Labels, General, do a lot of harm, and hurt people; call them *Confederates*." These labels still have their sting!

The struggle of the sixties was in fact a civil war. The seeds of discord were sown long years before the day when Washington wrote, "I wish that the officers of the army from Connecticut or Virginia would forget they came from separate states and remember only that they are Americans." No radical differences of opinion *within* a country were ever settled without the stern surgery of the sword—arbitration will never here be of any use. The war of the sixties was historically inevitable.

When on April 12, 1861, we heard that the flag had been fired on at Fort Sumter, a universal sense of insult roused the North. The churches North and South fell apart and the pulpit knew no more the charity which covers a multitude of sins. Even the old patriotic society of the "Cincinnati" lost its unity. Officers of the army and navy made their choice with which section they would stand, and it may be strange to you to learn the little-known fact that of West Point Southern graduates nearly 50 per cent. remained loyal to the flag as men of the North read loyalty, at what cost of family affection lost and of broken friendships you can easily imagine. It was very long after the war before these wounds were healed and innumerable family differences passed away. Alas, in some cases sectional hatreds were carried unsettled to another world than ours.

Not without reason have I made this digression. The ancient guild of physicians alone remained an unbroken organization—the offspring of Science and Charity, faithful to a creed centuries old when Christ was born. In hospitals and on the field of battle, where the surgeon ruled, there was the truce of God; and Letterman, the able surgeon-in-chief of the Army of the Potomac, merely put conduct into words when he said, "The wounded man ceases to be an enemy." I despair of making you realize through statistics the vastness of our task. Large figures only bewilder the imagination and do not fully assist it to realize how perfect was our achievement through those years of disaster and final triumph,

> Which blazoned duty's stainless shield
> And set a star in honor's sky.

How were we prepared to meet the demands of war? The old medical department of the army consisted of thirty surgeons and eighty-three assistants. Of these, twenty-four resigned to take part in the rebellion and three were dismissed for disloyalty; thirteen were natives of the South, but stood true to the flag. Soon after the beginning of the war it was found necessary, owing to age, to permit the surgeon-general to retire. Owing largely to pressure made by the Sanitary Commission and the profession, his place was filled by raising from the rank of assistant surgeon Dr. William A. Hammond. He fell at once into a tremendous business spreading over great spaces of country, increasing in perplexity, and making fresh demands every week, and at last so large that there was expended for ice alone in one year more than the whole amount of money which in peace sufficed for the entire medical service of the army. The organization also demanded complete revision, and, in fact, as the

* Address delivered before the Physicians' Club of Chicago, Feb. 25, 1913.

† As our readers of course remember, Dr. Mitchell died Jan. 4, 1914.

new surgeon-general said, there was not an aspect of his work which was not "foggy with embarrassments."

Whatever else may be thought or said of William A. Hammond, nothing is more sure to me than that he duly saw and used a great opportunity; that he served his country as few could have done; that he created the Army Medical Museum; that he saw the need for and advised the foundation of the Army Medical School; that he pointed out the men who were to direct the army museum and the medical library. Until the end of his army career he was the unfailing friend of scientific study, and created special hospitals for diseases of the heart, lungs, and neural maladies.

He had, however, defects of character which were increased by the applause which greeted the success of his radical measures to meet the demands of a war which ruined so many reputations. He was impulsive and self-confident. Thus, when he desired to deal with the excessive use of calomel by volunteer surgeons, he issued an order forbidding all use of calomel. He was, of course, disobeyed. Calomel was in those days a therapeutic saint to which when in doubt the average country doctor confidently appealed. When at last Hammond fell out with Stanton, the efficient and despotic secretary of war, he was tried by a court martial, broken, and, I think unjustly, removed from the army after a service of unequaled value. But this was late in the war—his work was well advanced and the successor's task easy.

WAR HOSPITALS

How we dealt with the demands of this war I am to endeavor to tell you, and first I wish to talk about the hospitals of the war to which the graver cases of wound or disease came soon or late from battlefield and camp. Early in this contest, at a loss, we seized on churches, factories, barns, even large private houses, as homes for the wounded. These soon proved insufficient. The earliest substitute was built at Parksburg, Virginia, by Surgeon Dunster, under Letterman's order, and consisted merely of closed sheds with open ridge ventilation. Then deserted barracks were used, and very soon we built those immense pavilion-hospitals near the great cities, some of which were, I believe, planned originally and built by John S. Billings, that man of many competencies. I think that his original idea was to erect one-story wooden pavilion wards of sixty beds radiating from central administration offices. There were other interesting plans, but all, I think, grouped the pavilions around a central building. These hospitals each held from one thousand to six thousand patients, and you may gather some idea of our task when I tell you that by and by they sheltered thirty thousand beds in and around Washington, and that near Philadelphia we had twenty-six thousand, about twenty thousand of these being in neatly constructed pavilion-ward hospitals.

By degrees the service in these immense temporary homes of the sick became admirable, and the American physician, quick to learn, profited by their vast clinical opportunities. When finally at times they became too small for the care of abrupt additions from remote battles, we pitched tents around them holding eight or ten cots, and quickly learned a new lesson, for it was found that patients with wounds and fevers did far better in these tents than in our best wards. The hint was readily taken, and elsewhere there arose hospitals composed of nothing but tents, large or small, sheltering in one instance fifteen hundred inmates.

You have rediscovered lately what in those days we knew perfectly well, that even pneumonia and bronchitis did best in tents no matter how bad the weather. My own little paper on "Camp Cure" dates from 1872. I believe now that a tent-hospital without permanent wards is a thing of the near future and will be quite well worth trial for small communities and as an addition to larger permanent hospitals. If I were required to erect a small hospital near a country town in a temperate climate, I should try this very rational experiment. It should have electric underground wires and the best drainage—all laid as if for a built hospital, and over this should be placed well-floored tents.

There were things seen in the surgical wards which you will, I trust, never see, or only in jars in the surgeon-general's museum. A slight flesh-wound began to show a gray edge of slough, and within two hours we saw this widening at the rate of half an inch an hour, and deepening, until in some horrible cases arteries and nerves were left bare across a devastated region. You will never see it. It was what we called "hospital gangrene." Instant removal to the open air of tents, etherization, savage cautery with pure nitric acid or bromin, and dressings of powdered charcoal enabled us to deal with these cases more or less well, but the mortality was hideous—at least 45 per cent.

I am not here to lecture fully on the medicine of war, but I cannot help recalling to your attention another scourge—erysipelas. This moved with strange rapidity from bed to bed in the ward, generally following the direction of the wind as it blew through the room. It was rare—very rare—in the great tent-hospitals, and was a formidable malady.

In isolated armies, as at Chattanooga, scurvy was another enemy, and a sad addition to the gravity of wounds.

The question of housing the wounded near the battle-lines also very early contributed its lesson. It was found that the injured men did badly in houses, better in barns, and best of all in tents. At the close of the war, or rather in January, 1865, there were in all 201 general hospitals. No matter how remote they were, these were subject to frequent ruthless inspections, when a trained man unexpectedly appeared at midnight or in the day, spent twenty-four hours in seeing everything in the hospital, and then with praise or blame sent to the surgeon-general reports which spared no one high or low.

I am perfectly satisfied that even the best of our city hospitals would be the better for these sudden inspections by watchful physicians, not of the staff or by ignorant lay managers. Such inspections should fulfil all the exactions of Dr. Billings' admirable little handbook of hospital management. I saw the experiment tried in Philadelphia in a great hospital. It was not very much liked, but to the bewilderment of a previously well-satisfied board of clergymen, it brought before them nine pages of humiliating revelations as results of an unexpected visit.

The detail of the management of these immense establishments soon became a marvel of efficiency,

and I should like to linger over a story which I must abbreviate. The ration was so liberal that money saved from it was set aside to be used for luxuries for the patients. There were also other additions to this fund, which became in some of the hospitals very large. Flour-barrels, bones and fat were eagerly bought. All the coffee-grounds were carefully kept and sold to the highest bidder. These were mixed with browned buckwheat or rye, or better than all with sweet potatoes, and then ground up and sold for coffee. A great many persons did not taste coffee except in this shape for two or three years of the war. Tea-leaves once used were also sold and greedily bought up. How they were served out anew to the public I have never been told. But above all the other available waste material in value were egg-shells. If you will reflect on this, you will understand that egg-shells are never saved up anywhere by households, and so, when you had the egg-shells of six thousand persons carefully treasured, there was eager bidding for them. The fact is that the egg-shell is a very pure form of carbonate of lime, and when it is calcined and ground up, it constitutes the base of all the finest face-powders which the ladies, I believe, still employ. There were also other sources of profit. The swill-barrel contents, which brought high prices, were promptly converted into pigs.

I ought to add that at the close of the war there were about $80,000 of those unused funds turned in from the hospitals. The surgeon-general was allowed to use this money as a basis for the great library of medicine in Washington.

The war poured into these wonderful camps of the sick and wounded a continued flow of damaged humanity—sometimes more rarely the ghastly product of a single battle. Out of our gates went the dead and the men sent home to die or to profit by the journey, for again we learned to our surprise that the travel homeward was a tonic of power, and that typhoid patients might be transferred long distances without harm, and indeed with good results.

Of the special hospitals created by the surgeon-general, I shall speak later, and in these I hope presently to interest you.

In 1861 there were already in the army 2,109 regimental surgeons, 3,652 assistant surgeons, and in the hospitals scattered through the country 5,500 acting assistant surgeons. By degrees things took shape, and when General Grant crossed the Rapidan, the medical corps had become a body of well-trained men who had been well lessoned in the terrible school of war, it is to be feared at some cost to many wounded men. To meet the needs of field and hospital service, Surgeon-General Hammond created the grade of brigade-surgeon, and by using acting-assistant-surgeons in the city hospitals released younger men for active use in the field. These acting-assistant-surgeons included men of high class, such as Drs. DaCosta, Agnew, Morton, Stillé and Keen in Philadelphia, and many of the best in your own and other of our great cities. A third creation to meet our needs was that of the medical cadets, young men of character who had had two years' education in medicine. Of these were men like Curtis, Collins, Warren and Tyson. My brother Edward was of these cadets. He died of diphtheria in the Douglas Hospital—a young life of great promise, one of four brothers in army service.

FIELD SERVICE

The organization of the army in the field under Surgeon Letterman and such competent brigade-surgeons as John Brinton and William Thomson may perhaps interest you. Every regiment had one assistant-surgeon, who gave immediate care to the wounded in action, choosing some presumably safe place for his ambulance and orderlies, with their knapsacks of dressings, etc. When, as sometimes happened, the chosen place came under fire, the surgeon moved farther away. Dr. John S. Billings thus operated under fire back of Round Top at Gettysburg, and at his next move had again to retire under a rain of bullets. In some cases retirement was not possible, and many surgeons did at times operate for hours while occasional bullets were flying over them. In one case known to me a man on the operating-table was killed by a bullet while his wounds were being dressed. It was a noble test, of course—none, I think, could be greater. The assistant-surgeon very often preferred to go with the stretcher-bearers nearer the firing-line. The drift of injured men to the ambulance station and past them again to the more remote field-hospital tents during an action was often hard to handle, and at times became overwhelming. When defeat, as at Antietam and Gettysburg, left the wounded of both armies to be cared for by the victor, then indeed the 600 surgeons of the Army of the Potomac were too few and surgeons were hastily summoned from the cities. The three days' fight in and near Gettysburg left of wounded, Union and Confederates, 27,000 men. All were cared for, their wounds dressed and they were under shelter early on the fourth of July, twenty-four hours after the close of the three days' battle. For contrast, I may say that it was ten days after the battle of Waterloo before all the wounded had been cared for.

When the Confederates opened on our line at 1 o'clock, July 3, with 150 guns, the difficulty of finding safe shelter was sadly illustrated, since the shells fell, some of them, in hospital tents half a mile back of our line, and one into an ambulance loaded with wounded.

The tactics of sanitation were at their best in the Wilderness campaign remote from towns. There 8,300 wounded men were cared for in two days.

By the way, one hears in novels and sometimes in history of bayonet charges—of the cold steel. I never saw a bayonet wound, and of 25,000 wounds in Grant's battles, including the hand-to-hand struggle of the Bloody Angle, there were in all fourteen bayonet wounds; there were probably as many men severely kicked by mules!

Regiments took into the field and hospital service many physicians who had no experience in grave cases demanding capital operations. As a consequence, there was for a time much bad surgery, and the competent were overworked. The day of aseptic surgery, so securely perfect as to tempt the most timid operator, was far away in time. The condition of the soldier and the contrast between what you have in your leisurely operations explains our appalling mortality. Twenty-eight per cent. of amputations resulted in death; of the trephined, sixty-one of every hundred died. We groped for bullets with roughed porcelain-tipped probes, the mark of lead on the probe recording the locality of the ball.

These surgeons appeal to me as unrecorded heroes. I have known of men who dressed wounds and did the gravest operations until they fainted beside the operating-table or fell asleep to find in an hour of slumber strength to go on with their work.[1] In camp and in battle these noncombatants paid their share of the debt of duty. At Gettysburg thirteen were killed or wounded. During the whole war fifty-one were killed outright or mortally wounded, four died in prison, and 281 of disease incident to active service. I deeply regret that we have no such statement in regard to the Confederate surgeon, who did on his part the same noble duty far less well supplied with the means of helpfulness.

I look back on my memories of hospital nurses during the war with very mingled feelings. Our nursing orderlies became rapidly efficient as we trained men to the less exacting nurse duties of that day. Very soon the question of women nurses arose. There were women like the Schuylers, the Lowells and Miss Wormly, of whom I think with grateful remembrance. When we were in the neighborhood of great towns we had many volunteer women nurses. Some were terribly earnest, utterly ignorant and quite incapable of discipline. Others, if more efficient, were not punctual and came and went as they pleased. A large proportion were early credited in the papers for patriotic services, and were seeking that notoriety which is the motive force of so many of the aspirations—and shall I say of the exasperations?—of our own unrestful days.

Our best women nurses were the too limited number of Roman Catholic sisters. Their value for male patients was at its best in proportion to their being refined ladies of a caste to which few of the Roman Catholic sisters belonged. I observed that good-looking, well-bred, low-voiced women exercised a wonderfully great control over our soldiers—a very American tribute with a physiologic basis.

Early in the war all captured surgeons and a detail of those who stayed with their wounded were released, but in some cases there was needless detention or retaliation, as when the Confederate cavalry officer, General Forest, held surgeons as prisoners, whereupon Grant refused to parole the surgeons taken at Vicksburg. All of the eighty Confederates who were left with their wounded at Gettysburg were promptly sent home as soon as we could dispense with their services. Some time in 1865 a general order set free all surgeons captured. It was very irregular, however, and when in September of that year I inspected Fort Delaware, there were about thirty surgeons held with other officers and confined in the casemates on account of a plot to capture the island. These gentlemen complained bitterly of their detention, and of the mosquitoes, which did not regard them as non-combatants. All other prisoners were at large on the island, were well fed, and allowed to bathe daily in the river. The mortality was, however, something frightful, and the men were dying at the rate of eight or ten a day when I visited the island. I saw in this case an explanation of the fact that the mortality of our prisoners very nearly equaled that in the terrible Confederate prison pens of the South, for a large proportion of the men I saw came into our hands diseased and suffering from insufficient diet, malaria or acute dysentery, and hence the mortality was very great. However that may be, at least in Fort Delaware I was able to report favorably as to food, water and everything else, except as to clothing. It was becoming cool in September, and these men were very lightly clad to meet a winter. My report puzzled the Department of War. Finally, as I learned later, an ingenious quartermaster suggested that the old clothing at the Schuylkill Arsenal be sent down to the island. On this, thousands of garments—musicians' and others—dating back to the War of 1812 and later, were drawn out of the stores of the arsenal and sent down to Fort Delaware. Our Confederate friends decided not to put on the grand uniform with the high collar and swallow-tailed coat of the U. S. musician of 1812. As the fall matured, however, the cold weather became singularly persuasive, and what with cutting off U. S. buttons and docking coat-tails they finally succeeded in clothing themselves; but I was told that for a time it was as good as a fancy ball.

1. William Norris I remember told me of being at work for thirty-six hours continuously.

PERSONAL EXPERIENCES

I have now to apologize for speaking rather more about myself than I have already done. Toward the close of the war the surgeon-general created what was called a "stump hospital" in Philadelphia, for all men who had lost a leg or arm. Why is there no technical name in Latin for the stump? These men came, as an old sergeant said, "got limbed," and were replaced by others. Usually there were from three to four hundred in this hospital. This chance was seized on at once with avidity, and the disorders of stumps studied and found extremely interesting. Especially so was the psychology of lost limbs—what I called "phantom limbs," a tempting subject. William James made a similar study far later, but confessed frankly that he could add nothing to my paper. It was a fascinating research, but the effect on the whole body of the absence of two, and in some cases of three members, is still open to physiologic inquiry.

I never can resist telling a story. While this subject was occupying my mind, a friend came in one evening and in our talk said, "How much of a man would have to be lost in order that he should lose any portion of his sense of individuality?" This odd remark haunted me, and after he left I sat up most of the night manufacturing my first story, "The Case of George Dedlow," related by himself. In this tale my man had lost all four limbs. I left this tale in the hands of a delightful lady, now long dead, the sister of Horace Howard Furness. Then I forgot it. Dr. Furness, her father, much amused, sent it to Mr. Hale, editor of the *Atlantic Monthly*. To my surprise, I received about three months afterward a proof and a welcome check for $85—my first literary earnings and certainly not a contribution on my part, because I had nothing to do with the disposal of the paper and had not authorized its being put into print. This story has had a dreadful number of successors—the product of my lengthening summer leisure. Some of you may have read them to your cost. The unfortunate George Dedlow's sad account of himself proved so convincing that people raised money to help him and visited the Stump Hospital to see him. If I may judge it by one of its effects, George Dedlow must have seemed very real. At the close of my story, he—a limbless torso—is carried to a spiritualist meeting, where the spirits call up his lost legs and he capers

about for a glorious minute. The spiritualist journals seized on this as a new proof of the verity of their belief. Imagine that!

My service in hospitals began in the Old Armory Building, Sixteenth and Filbert streets, long since swept away. It may amuse you to know that the only account of that hospital is to be found in my first novel, "In War Time," written many years later. I began here to take interest in nervous disease, which so pleased the surgeon-general that finally, after some changes, a hospital for neural disorders was created at Turner's Lane, near Philadelphia, in August, 1862, and pavilions were built for four hundred men. One was assigned to Dr. DaCosta, and afforded him a chance for a study of exhausted hearts and for other valuable papers. Surgeon Alden of the regulars was in charge. Drs. Morehouse and W. W. Keen assisted me, and we were relieved by special order of the time-killing red tape of hospital business. Dr. Keen lived in the hospital. Morehouse and I at that time were in large general practice, on which we depended. A morning visit to the hospital about 7 o'clock disposed of the general routine, and late in the afternoon we came back and several nights of each week worked at note-taking often as late as 12 or 1 o'clock, and when we got through walked home a couple of miles talking over our cases. We three did all the work in person. There were no stenographers or any such help, and sometimes the inflow of cases of injuries after a serious battle tasked us sorely. I have worked with many men since, but never with any who took more delight in repaying opportunity by labor. The opportunity was indeed unique, and we knew it.

The cases were of amazing interest. Here at one time were eighty epileptics, every kind of nerve-wound, palsies, singular choreas, and stump disorders. I sometimes wonder how we stood it. If urgent calls took us back into town, we returned to the hospital as if drawn by a magnet. In fact, it was exciting in its constancy of novel interest. Thousands of pages of notes were taken. There were many operations, many consultations, and toward the close we planned the ultimate essays which were to record our work. Each of us took his share, but all three were mentioned on the title pages of our essays. There was a small book on nerve-injuries and an essay on reflex palsies, both of which I wrote. Dr. Keen contributed an admirable paper on malingering. I have, alas! to record here what was to us an immense calamity. Our notes of epilepsy were very full, and there were things recorded which I have never seen since or seen but once, which are worth a moment's pause to mention. In certain cases of epileptic status, and sometimes in others, we could bring on an epileptic attack by pressure on the upper subclavicular thoracic region or by pinching the skin in that locality. Now you will please to remember that this was exactly what Brown-Séquard found in guinea-pigs suffering from artificially induced epilepsy. Our notes and conclusions in cases of acute exhaustion and extreme myasthenic conditions would have entirely anticipated the delineation of those disorders which we now accept under the name of neurasthenia. Unfortunately the recording of these states fell to Dr. Morehouse, who delayed writing about them until an unfortunate fire in his library entirely destroyed these priceless records. To this day I cannot think of it without regret.

In this hospital, massage was used to restore action to limbs in which healing nerve-wounds left the muscles palsied, or for the rigidity of splinted cases.

Among the numerous other matters on which I may not linger were the influence of nerve-lesions on nutrition and temperature, the first record of wounds of the sympathetic nerve, and the study of reflex palsies. The victims of nerve-wounds were often men worn out from fever, dysentery and long marches; hence some of the symptoms of nerve-wounds we described have never been seen since in like intensity. The statements in regard to causalgia—burning neuralgia—were received in England with critical doubt. That hospital was, as one poor fellow said, a hell of pain. In one year over forty thousand injections of morphin were used. Time lacks here to redescribe cases of neuralgia of such intensity that the pain was increased by the vibrations of a band of music, by the rustle of dry paper handled, and by a loud footfall in the ward. I have seen men pour water into their boots to lessen the vibration which the friction of walking caused. I have never encountered such cases since, nor shall we again until we see diseased men the victims of wounds.

I permit myself to say that a few years ago Dr. John K. Mitchell reexamined all the survivors of nerve-wounds whose cases we had detailed in our papers who could be found. This difficult task added a valuable chapter to our knowledge of nerve injuries.

It became the custom to turn over to us the cases suspected of malingering. These were the scamps or cowards, and in some cases the victims of a strange form of psychic disorder. I could interest you long by our devices to trap these fellows, commonly by the use of an anesthetic.

Cases of nostalgia, homesickness, were serious additions to the peril of wounds and disease, and a disorder we rarely see nowadays. I regret that no careful study was made of what was in some instances an interesting psychic malady, making men hysteric and incurable except by discharge. To-day, aided by German perplexities, we would ask the victim a hundred and twenty-one questions, consult their subconscious mind and their dreams, as to why they wanted to go home and do no better than let them go as hopeless.

In June, 1865, our work came to an end. The new surgeon-general ordered that all our notes should be at once turned over to the department. As the cases yet unused by us were of value to us alone, we were much troubled. At once we copied or had copied this whole mass of records, and within a month or more turned over to the surgeon-general's office the original case-books, with the exception of those unfortunately lost when in Dr. Morehouse's possession. Long afterward Dr. DaCosta lamented to me that he had obeyed the order, and somewhere pigeonholed are many of the valuable observations of that brilliant student of disease. We were told then that we had been insubordinate, but I remained pleased that for once in my life as an army surgeon I had disobeyed my superior.

NON-RECOGNITION OF THE SURGEON

I have detained you far too long, and come to a close with a sense of having failed to tell you fitly this story of eminent achievement. We had served faithfully as great a cause as earth has known; we had built novel hospitals, organized such an ambulance ser-

vice as had never before been seen, contributed numberless essays on disease and wounds, and passed again into private life the unremembered, unrewarded servants of duty. How far it taxed the average professional man of the cities—your city and mine—may be judged from the fact that in 1864 the living Fellows of the College of Physicians of Philadelphia were 174. Of these, 130 had been connected in one way or another with the service of the army or navy during the four years of that bloody struggle—certainly a record of honor. What has been our reward? The great leaders in war have been promoted and universally honored. Countless statues commemorate in Washington and elsewhere the popular heroes. Statues of generals are in every town, some of them memorials of men it were wiser to forget, some of whom history will judge severely. Every village has its statue to the private soldier. There is not a state or national monument to a surgeon. At Gettysburg, every battery site is marked with a recording tablet; every general who fell, Union or Confederate, is remembered in bronze or marble; but what of the surgeon who died? Nothing!

It is a relief to know that I have of late induced the Gettysburg Commission to mark with a bronze shield the site of every corps hospital, with the names of the surgeons who served in each. Please to fully realize the fact that this will be absolutely the *first national* recognition of the physician in the war. The situations of the Confederate division hospitals have also been marked. You will share with me the pride and pleasure all this has given me.

Has any one ever heard of the medal of valor being given to a physician? And what of the young surgeons who volunteered to test the fever-bearing bite of the mosquito—more deadly than the fang of the rattlesnake! Shall we be proud that the Republic asks of us, expects from us, every service, and has for us no honoring recognition in life and no memorial marble for those of us who died on the field of honor?

What, indeed, shall we ask for the surgeon who on the Isthmus of Panama made possible that gigantic piece of engineering surgery which, cleaving a continent in twain, made of it two vast islands and wedded sea to sea?

Ah, when I think of the risks some of us have taken, the laboratory problems to be solved at daily personal peril, I am proud of the silence of our courage. Contrast with the thunder of the reputations made in our tiny Spanish War the tranquil, modest efficiency of that more deadly war which Reed and his officers conducted against yellow fever. I conclude that perhaps after all our way is the better. We wage no kindergarten wars!

Let me close with what very long ago I said in forgotten verse far better than I can say it in prose. I wrote of the Goddess of Medicine:

> Fair heritress of every human hope,
> Rich with the marvels of time's widening scope,
> However high may rise thy soaring wing,
> Whatever change thy fuller days may bring,
> Our ancient lesson will be ever new;
> That priceless lesson will be ever true;
> Time did not teach it; time will change it not;
> This, this shall last though all our lore's forgot,
> To give what none can measure, none can weigh,
> Simply to go where honor points the way;
> To face unquestioning the fever's breath,
> The hundred shadows of the vale of death;
> To bear Christ's message through the battle's rage,
> The yellow plague, the leper's island cage,
> And with our noblest "well to understand
> The poor man's call as only God's command."
> Ay, under every century's changing sky,
> Shall the Greek master's triple signal fly—
> Faith, honor, duty—duty calmly done,
> That shouts no self-praise o'er a victory won;
> One bugle note our only battle call,
> One single watchword, Duty—That is all.

PALLIATIVE EFFECT OF ARTIFICIAL PNEUMOTHORAX IN TREATMENT OF PULMONARY TUBERCULOSIS *

WILLIAM C. VOORSANGER, M.D.
Visiting Physician, Mt. Zion Hospital; Clinician, San Francisco Tuberculosis Clinic; Medical Director, Oaks Sanatorium, Los Gatos
SAN FRANCISCO

Artificial pneumothorax or lung compression has assumed its place as an important factor in pulmonary therapy. Murriston Davies designates it as the greatest present-day advance in lung surgery. Phthisiotherapists, with a few ultraconservative exceptions, are beginning to look on it as the greatest addition to their armamentarium since Koch's discovery of tuberculin. So important has it become that several articles have appeared during the past three years as to who should be given priority for its discovery.

Forlanini, in a comprehensive monograph,[1] states that Carson (an English physician) in 1843, himself in 1881, and Murphy in 1898, each independently of the other's work, gave birth to the idea of placing a badly diseased lung at rest by compression with gas. Forlanini, as far as I can ascertain from a scrutiny of the literature on the subject, must be credited with the idea of performing artificial pneumothorax "medically" instead of surgically. Forlanini did not perform the operation until several years after his utterances of 1881.

Following the lead of Forlanini, the Germans seized eagerly on this method, and to Brauer and Spengler[2] belong the credit of stimulating world-wide interest by their celebrated report of 102 cases, representing operations performed at Davos, Switzerland, and in Hamburg, Germany, over a period of five years. They, however, changed Forlanini's method by creating the *Schnitt Methode* (incision method). They make a fairly large incision over the fourth, fifth or sixth intercostal spaces anteriorly, expose the intercostal muscle, and then force a blunt Salomon cannula into the pleural space. Brauer firmly maintains that his method is the only correct one, since it insures safety to the patient and absolute knowledge of the presence of the cannula in the pleural cavity. Still, Forlanini's method has become the one of choice among the majority who perform this operation (even the Germans), because it is far simpler and does not submit the patient to a surgical operation of considerable severity, and with improved technic and the more careful observation of the manometer, the accidents, particularly those occasioned by gas emboli, which occurred occasionally in the earlier operations, are to-day practically eliminated. Therefore, barring the cases of extensive pleural adhesions, the Forlanini, or

* Read before the St. Francis Medical Society, March 27, 1914.
1. Forlanini: Therap. d. Gegenw., 1910, Nos. 5 and 6.
2. Brauer and Spengler: Beitr. z. Klin. d. Tubere., 1911, xix, 1.

puncture method, is applicable to all cases in which artificial pneumothorax is indicated, and the Brauer, or incision method, should be reserved for the former.

From the numerous reports pouring in, and from my own limited experiences in the past two years, I feel confident that Brauer's method will in future be very rarely employed.

Just exactly what are we trying to accomplish when we compress a tuberculous lung? Principally delay; time in which to allow our other methods of treatment to become efficacious. Rest is given the tuberculous patient to prevent auto-inoculation. What more rational than rest, direct and complete rest, to the diseased part which is generating toxins? Forlanini states that an artificial pneumothorax must place the lung at "absolute rest, and this must be maintained until absolute cure results."

The direct effect of compressing a diseased lung with nitrogen is sometimes most startling. I have seen a stubborn cough cease within twenty-four hours after complete compression; temperature drop to normal after a few days; sputum rapidly diminish, and a general all-round improvement result in the patient's condition. There can be no question that artificial pneumothorax has rescued many tuberculous patients who did not respond to other methods of treatment and who would have died otherwise.

The theories of the mechanism of healing by this treatment as generally agreed on are: (1) rest to the involved organ; (2) an ischemia of the lung because of the elimination of venous circulation; (3) a diminution of toxin absorption, and (4) ultimate scarring over of diseased tissue. Perhaps more theories will evolve to explain further why we sometimes obtain such remarkable results in hopeless cases, when all other methods have proved futile. The direct effect of nitrogen on the tissues may offer a fertile field for investigation.

The indications for performing an artificial pneumothorax have been concisely given by Zink[3] in a report of 110 cases in which operation was performed at the Basel Sanatorium, Davos, as follows: (1) in all chronic destructive tuberculous processes (limited to one lobe) with a tendency to fibrous degeneration and cavity formation; (2) in all severe acute infiltrating and cheesy pneumonic forms; (3) in chronic infiltrating lesions without much destruction if they are of a progressive character or show no tendency to retrogression under prolonged treatment by other means, and (4) in uncontrollable hemorrhage. These indications are an amplification of those originally laid down by Forlanini and Brauer and Spengler.

The original warning not to compress a diseased lung when the other was involved has been modified. Reports of 104 cases, by Saugman, involving 5,000 inflations, Zink's exhaustive treatise, the recent further report of eighty-eight cases by Lucius Spengler, and the recent work of Dunham and Rockhill[4] in this country prove that in bilateral cases in which there is not too much involvement of the "good" lung, the other may be successfully and safely compressed. Arsperger[5] also reports excellent results in pleurisy with effusion, by early aspiration of the effusion, and introducing between the sheets of the pleura from 150 to 600 c.c. of nitrogen to keep them apart and check further production of effusion and adhesions. Incidentally he combines this method with autoserotherapy, that is, the subcutaneous reinjection of from 1 to 3 c.c. of the patient's own effusion.

Claude Lillingston, Herbert Rhodes, Robinson and Floyd, Rist, Maingot, Barnard in France, Sauerbruch and von Muralt, and numerous others who have given more or less extensive reports of their work during the past three years, agree on these indications. Mary Lapham[6] states as contra-indication (to lung compression), "any complication sufficient in itself to inhibit recovery and too great an involvement of the other lung." In short, in the reports of more than a thousand cases, representing many thousand inflations reported during the past five years by the best observers and workers in the field of pulmonary tuberculosis, there seems to be an agreement that artificial pneumothorax should be performed only when one lung at least is fairly sound; that it should be reserved for the case which does not respond to other therapy, and that it should be used only in cases in which, through its application, there will be a chance of arresting the disease.

In my own work during the past two years it occurred to me that in hopeless cases the patient who was constantly coughing and expectorating without relief might, through this method, end his days in comfort without the use of the large doses of morphin. I therefore attempted lung compression in three cases of very advanced tuberculosis with severe involvement of both lungs, in which, however, a large cavity could be diagnosed in one. These patients all had violent, persistent coughs and excessive purulent expectoration, the picture usually seen in terminal tuberculosis. They were selected because in each case a large cavity could be diagnosed in one lung, and on the rather dangerous assumption that the cough and expectoration was being formed in this cavity. At any rate, it seemed right to test the palliative effect of lung compression. The patient in each case was warned of the danger of the procedure and his consent and that of responsible relatives obtained. The report of these cases is briefly given below.

CASE 1.—F. O., army lieutenant, aged 34, seen at Letterman Hospital, Presidio, May 15, 1913, had had repeated attacks of high temperature for two years which had been diagnosed as malaria. Bacilli of tuberculosis had been found in sputum six months ago. The patient returned from the Philippines three weeks ago and had been in bed ever since. He had lost 40 pounds in six months, and was a much-emaciated man. The temperature ranged from 98 to 103. Examination of lungs showed extensive involvement of both lungs, most pronounced in the left, with a large cavity in the lower lobe of the left lung. The sputum measured from 8 to 10 ounces daily and showed numerous bacilli. Cough was persistent. The condition of the patient was very bad and the prognosis had been given of "exitus in about two weeks." The patient was removed at considerable risk to a private sanatorium, and on May 25 the first pneumothorax was performed, 100 c.c. nitrogen being admitted through the seventh intercostal space in the midaxillary line, under novocain (0.5 per cent.) anesthesia. The effect on the patient of even this small amount of gas was most distressing. He became quite cyanotic and was very dyspneic for about two hours. May 30, 200 c.c. nitrogen were admitted; June 7, 250 c.c.; June 14, 700 c.c., and June 28, 850 c.c. Subsequent inflations after the first were fairly well tolerated, and after the second the temperature became lower and the sputum started to decrease. After the fourth

3. Zink: Beitr. z. Klin. d. Tuberc., 1913, xxviii, 155.
4. Dunham, Kennon, and Rockhill, Charles S.: Therapeutic Pneumothorax as a Palliative Measure, Safeguarded by Stereoroentgenograms, a Report of Twenty Cases, THE JOURNAL A. M. A., Sept. 13, 1913, p. 826.
5. Arsperger: Beitr. z. Klin. d. Tuberc., 1913, xxviii.
6. Lapham, Mary E.: The Treatment of Pulmonary Tuberculosis, THE JOURNAL A. M. A., Sept. 14, 1912, p. 866.

inflation, June 14, 1913, the patient's cough had practically disappeared, the sputum never reached more than ½ ounce in twenty-four hours, his weight had increased about 10 pounds, and in all respects he was greatly improved. June 29, after his fifth inflation, he left the sanatorium and went to Fort Bayard, N. Mex. It had been his great desire to go to the latter place, but his weakness prior to pneumothorax treatment had been so intense that the removal was interdicted. He made the two days' trip without mishap. Advices from Fort Bayard, September 26, showed that he had received two further inflations and was improving. His improvement continued until very recently, when he became rapidly worse and died March 7, 1914.

I feel certain that lung compression in this case prolonged the patient's life for nearly ten months, most of it in comfort.

CASE 2.—P. V., referred by Dr. John Gallwey, with a very advanced, hopeless case of tuberculosis of five years' duration, was a much-emaciated man, with extensive infiltrations of both lungs, with a large cavity in the middle lobe of the right lung. The cough was contant and painful, and the dyspnea at times most distressing. Sept. 20, 1913, 100 c.c. nitrogen were admitted into the seventh interspace, right midaxillary line. September 22, 400 c.c. nitrogen were admitted. After this inflation the patient became very cyanotic and dyspneic. September 23, the patient left the sanatorium and went to his home feeling better. For one month after this the patient, although there was no change in his general condition, almost entirely lost his cough. He died about six weeks after the second inflation.

CASE 3.—G. S., first seen Aug. 5, 1913, had a history of slight cough, and a loss of 5 pounds in weight. One brother and several relatives on both the father's and mother's side of the family died of tuberculosis. There was a slight lesion in the apex of the right lung. No bacilli were found in the sputum. Von Pirquet was positive. Dietary treatment, rest and tuberculin were resorted to and the patient improved rapidly, gaining twelve pounds in weight and entirely losing the cough. November 28, he appeared at my office very much frightened, as he was having an extensive hemoptysis. He was immediately put to bed and kept quiet until the hemorrhage had partly ceased. November 29, the sputum, which had been free from tubercle bacilli, showed large numbers of the latter. December 5th, the hemoptyses had stopped but the temperature ranged from 100 to 104, and examination revealed an extensive cavity in the middle lobe of the right lung and beginning infiltration of the left lung. This condition can be accounted for only on the theory that the right lung must have been centrally undermined so that no physical signs were apparent. A sudden rupture into a large vessel caused the hemorrhage and opened up the cavity. The patient's condition becoming rapidly worse, pneumothorax was applied December 17 (Forlanini method), by admitting 350 c.c. of nitrogen into the sixth interspace right midaxillary line. December 18, 400 c.c. were admitted. December 27, 800 c.c., and January 17, 1,000 c.c. The patient's cough became greatly improved, "blood-spitting" following the hemoptyses ceased, and the temperature dropped to 99.5. February 1, he was suddenly seized with pneumonia, and died Feb. 4, 1914.

This was undoubtedly an acute, progressive tuberculosis, and the prognosis was in doubt from the start.

These three cases, all different in type but progressive, advanced and hopeless, were selected for lung compression to relieve cough and expectoration and not with a hope of arrest. In the former sense, the procedure must be looked on as successful.

I should, therefore, like to add to the indications usually given for lung compression the following: Hopelessly advanced cases in which after careful examination it is ascertained that cough and expectoration is being produced from a large cavity in one lung even though the other is badly infiltrated.

The technic of artificial pneumothorax is simple. I use a Hawsmann modification of the Forlanini apparatus and a trocar 2 inches in length. I formerly used a larger trocar of wider caliber, but have found the shorter one more satisfactory in most cases, as with it there is little danger of penetrating the lung. Great care should be exercised in avoiding damage to the lung-tissue. As careful a sepsis should be used as in any operation. I use as an anesthetic 0.5 per cent. novocain, and apply it first deeply and then superficially. In this way I believe that the so-called eclamptic attacks due to a pleural reflex, and cases of nervous shock can be, to a great degree, avoided.

Much has been written recently by Sillig[7] and Orlowski and Jofanno[8] on pleural reflexes, which are now believed to be responsible for such conditions as laryngospasm, slowing of the pulse, vertigo, cough, sudden paleness of the face and fainting. These conditions heretofore have been attributed to gas emboli.

I always use the Forlanini method and pass the trocar in the sixth or seventh interspace in the midaxillary line whenever possible. Careful physical examination controlled by roentgenography should guide the operator as to the best space for entrance. When adhesions prevent going into the space of choice, an attempt may be made higher up in the fifth or fourth interspace anteriorly. Several punctures are sometimes necessary before arriving in a free pleural space.

The real success in applying artificial pneumothorax lies with the manometer. One is sure that he is in the pleural cavity by the manometer registering negative pressure. The manometer tells us, by not registering at all or by registering positive pressure, whether we are in lung tissue, in a blood-vessel, in the pleural wall, or whether our needle is obstructed. Brauer calls negative pressure a pneumothorax symptom. Sometimes when no fluctuation of the manometer is obtained, a small amount of nitrogen—from 25 to 50 c.c.—may be cautiously admitted. If small adhesions are present, these will be broken and the manometer will then register.

Considerable has been written on the reading of the manometer. The number of millimeters negative or positive pressure is immaterial. The rule which I have established for myself is never to allow gas to flow until the manometer registers free and full fluctuations, and immediately to stop the flow when the pressure changes from negative to positive. I do not measure the exact amount of the latter, because I never on first inflation allow more than from 300 to 400 c.c. to enter, and sometimes stop with 100. On the following day from 300 to 500 c.c. are given, then an interval of two or three weeks is allowed to elapse, when from 600 to 800 c.c. are admitted, depending on the manometer. After the third inflation, compression is performed every few weeks and sufficient nitrogen admitted to maintain positive pressure, not to exceed 1,000 c.c.

Robinson and Floyd in this country give 1,000 c.c. as first injection. Originally Forlanini, Brauer and their disciples gave as high as 2,000 c.c. at an inflation, obtaining the highest possible positive pressure. Subsequent observers have shown this to be not only unnecessary but absolutely dangerous, causing such complications as emphysema, dislocation of the heart

7. Sillig: Rev. médicale de la Suisse romande, 1913, No. 7, excerpt Internat. Centralbl. d. Tuberc. Forsch.
8. Orlowski and Jofanno: Beitr. z. Klin. d. Tuberc., 1914, xxx, No. 1.

and rupture into the opposite lung. The best results to-day are accomplished by using just enough nitrogen to compress the lung sufficiently. This never should on first inflation exceed 400 c.c., and on subsequent inflations 1,000 c.c. Pressure should be tested after admission of each hundred cubic centimeters. If these precautions are taken, the numerous complications heretofore reported may be avoided. In my own work the only complication (in two cases) has been a subcutaneous emphysema which, although slightly painful, disappears in a few days.

The results in artificial pneumothorax have been uniformly good. Brauer and Spengler[8] in their 102 cases assert that accurate statistics of arrests by this method are not practicable, since (1) every case must be analyzed for itself; (2) in many cases we fail to produce a pneumothorax on account of pleuritic adhesions, and (3) cases in which we expect failure are often successful and vice versa. They conclude, however, by stating that they obtained results which could not have otherwise been accomplished.

Saugman[9] reported 104 cases. In 30 per cent., pneumothorax could not be performed. In seventy-two cases, effectual compression was obtained. He reports good results.

Zink,[3] in 110 cases, reports that he accomplished effectual compression in eighty-one cases.

Lucius Spengler[10] reports eighty-eight cases, in which he obtained in twenty-three cases, or 26 per cent., permanent results in from six months to five years. Thirty-six patients, or 41 per cent., are under treatment but improving; ten cases, or 11⅓ per cent., are improved, and nineteen cases, or 21⅔ per cent., were unsuccessful. He reports a favorable result in 78⅓ per cent. of all cases.

E. Grundt[11] reports twenty-eight cases, with success in nine.

L. Hamman and M. F. Sloan[12] report twenty cases with successful results.

Rothschild and Fehleisen[13] report thirty-three cases with good results.

R. C. Matson[14] reported sixteen cases with three arrests and five cases steadily improving.

Dunham and Rockhill[4] treated twenty patients with good results. They dwell particularly on the value of Roentgen examinations.

H. M. King and C. W. Mills[15] report sixteen cases. In two cases there was permanent arrest, in six temporary improvement, and in one case hemorrhage (which was controlled).

In six cases on account of pleural adhesions compression was unsuccessful.

Mary Lapham[6] reports thirty-one cases with success in 40 per cent.

My own cases thus far number fourteen, covering a period of less than two years. The cases have been carefully selected from a large material, based on the indications as given above. The number is small because I am still of the belief that only those cases should be reserved for artificial pneumothorax which, after a fair test, do not respond to our other well-tried methods of treatment. In this series are those advanced cases reported above. Of the other eleven, two patients could not be inflated, one on account of adhesions, the other on account of an old pleurisy with effusion. Three cases are arrested, one patient is rapidly improving, and four patients are progressing favorably, being inflated at intervals of four weeks. Two patients stopped treatment of their own volition. All cases were, whenever possible, controlled by roentgenograms before operation and before the second inflation. All compressions have been made by the Forlanini method, with 0.5 per cent. novocain anesthesia.

I cannot agree with those observers who assert that artificial pneumothorax should be performed only in a hospital or sanatorium. I have performed it at the clinic, at my office and at the patient's home. Whenever possible I perform the first inflation at a hospital, permitting the patient to leave the same day. When a pneumothorax is once established, subsequent inflations are simply and quickly performed if one's technic is correct. I agree with Lillingston[16] who states that most cases of sudden death in the past have been due to faulty technic. As long as careful asepsis, careful anesthesia and careful reading of the manometer are observed, no accidents of serious import should occur.

I wish to thank Dr. George H. Hubbell for the valuable assistance rendered in the roentgenographic work in these cases.

162 Post Street.

9. Saugman: Internat. Cong. Med., London, August, 1913.
10. Spengler, Lucius: Internat. Centralbl., January, 1914.
11. Grundt, E.: Med. Rév., 1913, No. 6.
12. Hamman, L., and Sloan, M. F.: Johns Hopkins Hosp. Bull., February, 1913.
13. Rothschild and Fehleisen: California State Med. Jour., September, 1913.
14. Matson, Ralph C.: Northwest Med., January, 1914, p. 10.
15. King, H. M., and Mills, C. W.: Am. Jour. Med. Sc., 1913, cxlvi, 331.

RADIUM TREATMENT OF CUTANEOUS EPITHELIOMAS BY SINGLE OR MASSIVE DOSES*

A. SCHUYLER CLARK, M.D.
NEW YORK

Wickham and Degrais[1] have microscopically determined that "cancer cells, exposed to radium after a primary hypertrophy, disorganize, become soft, disintegrate and are probably eliminated by a phagocytosis. The connective tissue enveloping and separating the mass of cancer-cells, on the other hand, is stimulated and regenerated by the invasion of embryonic nuclei, which dissociate the groups of cancerous cells, finally replacing them. These modifications tend to a fibrous transformation of the tumor, producing, as we know, the unusually good scar that results with such a healing." That any one of the three so-called alpha, beta or gamma rays has an advantage in producing this effect I cannot affirm. I should rather believe that in the method I use the results are probably due to the great amount of rays to which the tissues are exposed, for I use no screen except a thin layer of mica which only filters out some of the alpha rays. The gamma rays constitute only 1 per cent. of the whole radio-activity and, while they are the ultrapenetrating rays and the only ones available for treating deep-seated lesions through the unbroken skin, they are in such a comparatively small quantity that most extensive exposures would seem to be necessary to get a sufficient effect. This in a measure can be overcome by the multiple source and cross-fire methods

16. Lillingston, Claude: Lancet, London, 1913, ii, 185.

*Read before the United Medical Society of New York.

1. Wickham and Degrais: Radiumtherapy, Funk and Wagnalls Co., New York, 1910.

of Wickham and Degrais, but the failure to get results often in the deeper-seated lesions would seem to be due to the inability to secure the penetration of the rays in sufficient amount to all parts of the tumor rather than to the character of the rays. A sufficient number of any one of the alpha, beta or gamma rays will, it has been demonstrated, produce a radiodermatitis. Beta rays have necessarily predominated in my exposures.

Masotti[2] pictures and reports several cases of epithelioma of the skin healed by radium. He remarks on the scar, the ease of the method, and states that he found it unnecessary to determine the variety of epithelioma, as radium was equally effective in the cicatricial, squamous, ulcerating or fungating variety, the length of exposures varying according to the depth of the lesion. He used the rays unfiltered or with only a very thin rubber layer between the tissues and ray source.

Dreyer[3] in his little book reports and pictures cases of epithelioma of the cheek and nose healed by radium, and Bayet has resolved idiopathic sarcoma of the skin with two-hour applications every second day over a sufficient period. He emphasizes the accepted fact of the relatively greater effect of radium on sarcoma as compared with carcinoma and epithelioma.

Robert Abbe of New York in his various communications on radium and cancer has mentioned numerous cases of cutaneous epithelioma successfully treated with radium and he would seem unquestionably to give preference to radium in cutaneous epithelioma therapeutics.

Wickham and Degrais,[4] who probably have had far greater experience with radium than any other observers, are most enthusiastic about their results in the treatment of cutaneous cancers. They report numerous cases, varying from beginning degeneration in warts or keratoses to rapidly growing, malignant, neglected and in some instances inoperable carcinoma beginning in the skin, in which healing has been effected with radium. Many of the patients have remained well after several years, and their photographs show uniformly a remarkably good cosmetic result.

Bayet has treated twenty-five cases of epithelioma. He uses for epithelioma practically unfiltered rays. Six sittings would after two weeks be followed by a strong reaction, a yellowish crusting on non-ulcerating epithelioma, and the formation of a sort of diphtheritic membrane on ulcerating epithelioma with a slow absorption of the diseased tissue under these coverings.

Williams and Ellsworth[5] picture and describe twelve cases of superficial new growths healed with radium, some remaining well after five years. They used a cell of 50 mg. and advised from three to ten exposures, not more than two per week. They conclude that "the application of pure radium bromid in sufficient amount and properly used is a harmless, painless and efficient method of treating early superficial new growths, and particularly of the face because of the excellent cosmetic results.

Simpson[6] has treated about a dozen cases of epithelioma situated on the face. Two of these were of the lower lip, location which, to my mind, should contra-indicate any form of treatment but extensive surgery followed possibly by radium treatment. He compares his results favorably with those of the Roentgen ray and says that the indications and contra-indications are the same in both forms of treatment.

Dominici and Warden[7] picture and describe some remarkable results in the treatment of malignant disease, mostly inoperable, among which were an epithelioma of the nose and one of the lip, both completely healed. He speaks of these results as chiefly interesting in the remarkable restoration of tissue—"the radium seeming to have the effect of singling out the malignant tissue and causing its absorption and of sparing the normal tissue and determining even a certain amount of healthy new growth."

Henri Audouy[8] reports 25 cases of cutaneous epithelioma treated by radium and concludes that it has some sort of specific action on the cancer-cell—that it will heal even vegetating or ulcerating cutaneous epithelioma and that it is the least painful and gives the best cosmetic results. He advises using the composite rays rather than the ultrapenetrating rays and describes two methods: first, numerous short exposures without much reaction; second, two or three prolonged exposures producing considerable reaction and destruction of the cancer-cells. Several of his cases would seem to show that Audouy grasped the importance of a thorough destruction of the cancer-cells.

Pierre Petit[9] in 1908 observed nine cases of cancer of the skin and mucosa successfully treated by radium. The method followed was after Dominici, using only the ultrapenetrating rays and filtering out the alpha and most of the beta rays by lead screens from 0.5 mm. to several millimeters in thickness. Naturally, it was necessary to make long exposures, for only a comparatively small percentage of radium rays are ultrapenetrating. Petit could produce a radiodermatitis if enough of these rays were used, but declared the advantage of the method was the non-production of radiodermatitis. The question arises, Did he get enough of any rays to the cancer-cells to destroy them completely? His cases were reported too soon after treatment to determine this fact. He reported three failures to influence, but these were extensive lesions of the lower lip and mouth, with glandular involvement.

The cases herein reported were all treated with a 10 mg. cell of radium from the Curie Laboratory, containing 2.55 mg. of pure radium bromid with a radioactivity of 1,300,000. No filter was used except the three-eighth- to one-half-inch layer of air space, the exposures being made at this distance from the lesion. Crusts, when present, were softened and removed. In no instance was a biopsy made because I am loath to open up any blood- or lymph-channels before the cells forming the lesion are destroyed. The diagnosis was usually easy and confirmed by the several dermatologists in my clinic.

Whenever possible, the single or massive-dose method was used because after a considerable experience in the Roentgen-ray treatment of cancer, extending over a number of years, I had become convinced that there were an infinitely smaller number of recurrences after the single- or massive-dose method.

2. Masotti: Traitement des dermatoses par le radium, Baillière et fils, Paris, 1910.
3. Dreyer, Albert: Radium als Kosmetikum, Bonn, F. Cohen, 1913.
4. Wickham and Degrais: Radium and Cancer, Hoeber, New York, 1913.
5. Williams and Ellsworth: Treatment of Superficial New Growths by Pure Radium Bromid, The Journal A. M. A., May 31, 1913, p. 1694.
6. Simpson, F. E.: Radium in Skin Diseases, The Journal A. M. A., July 12, 1913, p. 80.
7. Dominici and Warden: Technique and Results of Radium Therapy in Malignant Disease, Brit. Med. Jour., Aug. 27, 1910, p. 516.
8. Audouy, Henri: Traitement d'épithéliome cutané par le radium, Paris Theses, 1910-11, ii, No. 13.
9. Petit, Pierre: De l'application du rayonnement ultra pénétrant du radium au traitement des cancers de la peau et des muqueuses, Paris Theses, 1908-09, No. 91.

Exposures varied from twelve or fifteen to twenty-four hours, depending on the depth and nature of the lesion. Where it was impossible to do this at one sitting, second or even third exposures were given as soon after the first as possible in order to approximate this method and time.

Clinically, there followed in from two to five days an erythema of the normal tissue—for a considerable area of normal tissue immediately surrounding the lesion was always included in order that any outlying cancer-cells might be destroyed—with the formation of a membranous crust on the lesion itself if ulcerating, or, softening, and breaking down with discharge beneath a rupial, soft crust, if it were a solid nodule. At the end of the third week the lesions began to dry and clean up with a diminution of the redness of normal tissue, and healing proceeded, under a dry scab often, with the formation of a thin, nearly level, pale scar in from five to eight weeks.

Clinically, to destroy the cancer-cell, while only producing a more or less pronounced inflammatory reaction in the healthy cells from which they can recover, has been proved to be quite practicable and I would estimate the margin of time-exposure between the destruction of the cancer-cells and up to a destruction of the normal tissue-cells adjacent, roughly, as about one-fifth of the whole time necessary to destroy the cancer-cells, which leaves a pretty safe working margin for any slight error in overexposure.

Granting, for the sake of argument, that more or less normal tissue is destroyed in our efforts completely to destroy all the cancer-cells, are we not better justified in a certain amount of scarring than in a probability of a recurrence? As a matter of fact, the cosmetic results in my cases compare most favorably with any form of treatment I have ever seen. None of the patients have complained of any considerable pain, such as I have observed after similar Roentgen-ray exposures. They have described their sensations as itching or slight stinging. All the lesions have healed kindly after these massive doses.

My idea has then been, I repeat, to give as long a single exposure as compatible with a return of the included healthy cells to normal, or at least, a large part of them, this latter being of considerable importance from a cosmetic point of view. I have adopted this method in the radium treatment of cutaneous epithelioma because it is, I have become convinced, the method to be used in the Roentgen-ray treatment of similar lesions. Time alone will verify the ultimate success of this method.

Its healing qualities are demonstrated in the following cases:

CASE 1.—H. B., American woman, aged 46. Two and a half years ago the lesion first appeared as a little pimple which slowly grew and after six or eight months ulcerated and scabbed. The scab would fall off and the lesion would bleed. For several months the lesion was burned with some kind of an acid every week or two. The ulcer apparently never healed, for when first seen, fourteen months ago, the patient presented on her left cheek a lesion the size of a five-cent piece with a typical, pearly, raised edge and a smooth base with one or two small pearly nodules in it. The patient was then given three comparatively short applications of radium at three-day intervals. The lesion, after six weeks, seemed entirely healed, but when seen six months later, there was a recurrence along the lower half of the original pearly edge. I then gave the patient one single massive dose of radium which was followed by the usual reaction and formation of a greasy-looking crust. The lesion completely healed under this with a smooth, white and practically level scar, and now, after eight months, the patient is quite well.

CASE 2.—A. H., German man, aged 47. The lesion first appeared over the right maxillary region ten years ago, slowly grew and finally a little scab appeared on it, which would fall off. Each time the scab fell off bleeding would occur and the lesion would apparently have increased slightly in size. At intervals of from six to twelve months the lesion had been curetted and cauterized with silver nitrate followed by apparent healing, but with a relapse each time. Fourteen months ago, when first seen, the patient presented a typical, non-ulcerating epithelioma about the size of a quarter with scattered pearly nodules over its base and a typical, raised, pearly serpiginous edge. Six comparatively short applications of radium were made over a period of five weeks and, while the lesion apparently healed with little or no reaction, it showed signs of recurring along one edge some six months later. One massive single dose of radium was then given and the area, after the usual reaction, seemed completely healed. For eight months the patient has remained free of disease with a smooth, level scar at the site of the lesion.

CASE 3.—T. H., American man, aged 40. The lesion began three and one-half years ago on the left cheek and soon became a scabbed and bleeding superficial ulcer. It had never grown rapidly although it had increased in size, and when, seen, fourteen months ago, was a typical, superficial ulcerating epithelioma the size of a three-cent piece. Four comparatively short radium exposures were given and the lesion healed with little or no reaction, remaining well up to three months ago, when the patient presented himself with a recurrence of the ulceration at the site of the old lesion, and a red, indurated condition extending beyond the lesion for a quarter to a half inch. This patient was then given a very long application of radium at two sittings on successive days, as it was impossible for him to spare the time during one twenty-four-hour period and, after a very pronounced reaction with considerable crusting, the lesion after six weeks has healed and seemingly presents a perfectly smooth scar without any surrounding induration. The patient is apparently well.

CASE 4.—H. C., American woman, aged 60. Four years ago the lesion began as a pimple on the right ala of the nose. It slowly grew and when scratched, she says, would form a scab, which would fall off, when the lesion would occasionally bleed. It was then cauterized and healed. Three years ago she had a relapse of the condition and the lesion was curetted and cauterized with silver nitrate and again healed. Fifteen months ago there was again a relapse at the site of the old lesion and when the patient was seen she had an ulcer in the center of an old scar with hard, pearly, raised, typical edges and a smooth ulcerating base. The lesion apparently had not involved the deeper parts. The patient was given three comparatively long exposures on successive days amounting in reality to a single massive dose and the lesion promptly healed and now remains well after thirteen months.

CASE 5.—J. H., American laborer, aged 46. The trouble began eleven years ago as a little sore on the left cheek near the angle of the mouth. It slowly grew, in spite of treatment with salves and caustics, until four years ago, when it was curetted out and cauterized with silver nitrate. The lesion did not heal and was curetted again three years ago. The lesion never entirely healed and eighteen months ago it was again curetted and burned with silver nitrate and healed except a firm edge, which persisted. When first seen, fourteen months ago, the patient presented a serpiginous, non-ulcerating lesion with raised, pearly edges on a fairly deep, indurated base, with considerable scar-tissue and one or two other small pearly nodules scattered through it. After three comparatively long exposures with as short a space of time as convenient the lesion healed, after considerable reaction, and his doctor writes me that up to the time the patient died by accident, eight months later, there was no sign whatever of a recurrence.

CASE 6.—M. N., American woman, aged 70. Two years ago the trouble began on the left ala of the patient's nose as a little scab and when the patient was first seen, thirteen months ago, the lesion had spread so rapidly that it involved

the whole of the lower end, both alae of the nose, extended out on the left cheek and was a rapidly spreading, excavating ulceration with typical, hard edges and apparently a very malignant process. The tip and right ala of the nose were exposed to a massive dose of Roentgen rays and the left ala and a portion of the disease extending out on the right cheek, comprising an area a little larger than a quarter, was exposed to a massive dose of radium. This patient I have not seen, but her physician writes me that although her nose was very sore for nearly two months the lesion entirely healed with a smooth, white atrophic scar, giving the nose a small, pinched, drawn appearance. It has remained smooth and clean up to the present, a period of eleven months. This was certainly a malignant, rapidly spreading process, inoperable without great destruction of tissue, and is, I consider, a most excellent result for this method with both the Roentgen ray and radium.

Case 7.—E. C., American man, aged 30. Lesion began between four and five years ago as a pimple on the left malar region. It slowly grew, would scab and occasionally bleed. The lesion was burned out two or three times but never entirely healed. When first seen, thirteen months ago, there was a typical, hard, pearly non-ulcerating epithelioma at the upper edge of an old scar about three-quarters of an inch in length and three-eighths of an inch in width. The patient was given four moderately long radium exposures, which were followed by a very moderate reaction, with healing of the lesion and a splendid scar. Three months ago the patient presented a slight recurrence at the site of the original lesion and a single massive exposure was given, followed by a considerable reaction and healing with as good a scar as was present before the large dose was administered.

Case 8.—F. L., German man, aged 56. The lesion began about three years ago as a pimple in front of the right ear. It grew to the size of a large pea and was curetted and silver nitrate applied to the wound. One year ago the patient noticed a little lump again at the same spot, which has gradually grown and has sensations of heat and itching. When seen, there was a distinctly firm nodule the size of a large pea, pearly, waxy-looking, hard and non-ulcerating. It was a question whether this was a recurrence of the old trouble or a keloid, the result of the cauterization. Believing that either would be favorably influenced by radium, I gave him a moderately prolonged exposure and, while the lesion greatly diminished in size, there still presents, after nine months, a small, hard, white, waxy nodule which is under observation and which, I am quite convinced now, was originally a keloid. The condition was, however, benefited and no further scarring resulted from the radium application.

Case 9.—W. R., American woman. Patient first noticed a little scab on the forehead four and one-half years ago. It gradually grew, ulcerated, and two and one-half years ago patient began having Roentgen-ray treatment. This she had off and on with some benefit, but the lesion never entirely healed under it. When first seen, six months ago, patient had a red patch, size of a half-dollar, with an elevated, hard epithelioma, finger-nail-sized, at the lower edge of the patch. Four very considerable exposures during a period of seven days were administered, practically amounting to a single massive dose, and the lesion promptly healed under the usual crusting. The patient now presents a level, soft, and not disfiguring scar.

Case 10.—A. R., German woman, aged 50. Trouble first began as a pimple on the left cheek nearly three years ago. Patient would scratch it, a scab would form, fall off and the lesion would bleed. On two or three occasions the lesion had been curetted and cauterized with silver nitrate, followed by a fairly prompt relapse each time. When first seen, ten months ago, patient presented a scabbed superficial lesion with pearly, hard edges, size of a three-cent piece. The lesion healed promptly after a moderately long single exposure and after nine months the patient now is well with a splendid cosmetic result.

Case 11.—M. T., German man, aged 50. The lesion first began as a pimple over right eye about twelve years ago, gradually grew and bled rather profusely at times. The lesion has been curetted and cauterized with silver nitrate four times in the past nine years with a relapse in from twelve to eighteen months after each treatment. When first seen, ten months ago, patient presented a superficial scabbed epithelioma with typical, elevated, pearly, hard edges the size of a five-cent piece. After a moderately prolonged single application the lesion healed and now remains well after nine months.

Case 12.—M. J., German woman, aged 60. Three and a half years ago patient first noticed a small pimple on her forehead which gradually grew larger. It was treated with the Roentgen ray. Nineteen months ago it was curetted and cauterized with silver nitrate. It began to relapse sixteen months ago and had gradually increased in size until, when seen, nine months ago, the patient presented two recurring nodules the size of large peas of typical pearly character, along the edge of an old scar. After several moderately long exposures with radium during as short a period of time as possible a considerable reaction resulted, followed by healing with a splendid soft level scar and the patient remains well after seven months. The massive dose was here approximated as nearly as possible.

Case 13.—J. S., American man, aged 65. Lesion began about three years ago as a pimple on one of the cartilaginous edges of the lobe of the left ear, gradually grew and, when seen, eight months ago, was a typically firm, raised, pearly non-ulcerating epitheliomatous tumor, the size of a finger-nail. A single, prolonged application with radium was made and the patient was instructed to report from his home in the South at intervals. At the slightest sign of a recurrence he was requested to come for further treatment and, while I have not heard from him, I have reason to believe that his physician would have referred him back to me had he been in further trouble.

Case 14.—J. McC., Irishman, aged 54. The lesion began as a small indurated lump over the cartilaginous roll at the back of his left ear fifteen months ago. When first seen, six months ago, the patient presented a considerably raised swelling, ulcerated at the top and scabbed, situated on the back of the lobe of the left ear, occupying practically the whole of the width of the lobe and extending an inch and a half along its long or vertical axis, distinctly pushing out the ear from the side of the patient's head as compared with the opposite side. Moderately long exposures were given to this mass at two different sittings as it was impossible to include the lesion entirely with one exposure. While the lesion after some reaction was greatly diminished in size and the ulceration healed, there still remained a very considerably elevated and active indurated condition. Five and one-half months ago the lesion was exposed to my radium cell for seventeen hours, and this exposure was followed by a complete disappearance of the mass after a considerable reaction. The scar can now barely be seen and represents apparently the ulcerating portion of the lesion. This was a malignant, rapidly growing epithelioma and, to my mind, represents at present an excellent result.

Case 15.—American woman, aged 64. About fifteen years ago trouble began as a little speck, as patient describes it, on her nose, gradually grew, scabbed and bled occasionally. Seven years ago the lesion was burned out under ether but it broke out again three years ago and was then curetted and cauterized with silver nitrate. After this it healed but soon again broke out, and was again curetted and cauterized; a relapse followed, and when the patient was seen, eight months ago, the lesion had been present three years. On examination a cicatricial scar occupied an area the size of a half-dollar along the upper half of which there was a crescent-shaped, elongated, hard, pearly, raised, typical epithelioma. Eight months ago three moderately long exposures with radium were given without much reaction and, while the lesion improved, there still remained distinct evidences of it. Six months ago several prolonged applications within as short a space of time as possible, aggregating many hours, trying for the massive-dose effect—though it was impossible because of the patient's age and position to do this all at one or two sittings—the lesion was healed after a considerable reaction and now patient has a very perfect, smooth, soft, pliable, level scar.

CASE 16.—F. S., German woman, aged 40. Lesion began on the right malar region ten years ago, has been cauterized and curetted two or three times but relapsed regularly and now has been growing slowly for three years. When first seen, seven months ago, the lesion was a soft, fungating, cauliflower-like epithelioma with a firm, indurated edge and apparently considerable involvement of the underlying tissue. A single prolonged exposure was given the patient, with usual instructions to report, but I have been unable to hear of the patient since exposure.

CASE 17.—C. T., Irish woman, aged 67. Patient had had lupus erythematosus scattered over the face and forehead at varying periods for many years. Fifteen years ago she had an open sore cut out of her lip near the left ala of her nose. One and one-half years ago a pimple began to grow on her left cheek, grew rapidly into a soft granulating mass and then stopped; latterly it had been growing again. When seen, six months ago, it was a soft-looking, highly raised, granulomatous mass with rather deep induration of the base and a firm induration extending out into the surrounding tissue for about a quarter to three-eighths of an inch. At that time several prolonged applications were made within as short a period as convenient, with the idea of approaching the single, massive-dose method as nearly as possible, aggregating some twenty-eight hours. The lesion healed after rather pronounced reaction and at the present time shows a clear, level, pliable scar.

CASE 18.—C. T., an old Irish woman. For the past year patient had noticed a lump growing on the right side of her neck. It had grown more rapidly in the last two or three months. When first seen she presented a soft, fungating, raised epithelioma the size of a hickory-nut, on the right side of her neck. There was little or no induration extending out into the surrounding tissues. The lesion was given one very prolonged exposure to radium, healed promptly in the usual way and the resulting scar is at present everything that could be desired.

CASE 19.—T. C. S., American woman, aged 42. The past two years patient had had a little spot on the left side of her nose. A crust would form, fall off and the lesion would bleed. When seen, three months ago, the patient presented a typical, superficial epitheliomatous ulceration with pearly, hard edges about three-quarters of an inch in length by half an inch in diameter. Immediately surrounding this there was a seborrheic, crusted condition. The patient was given one prolonged massive dose of radium and her physician reported that everything had healed at the end of six weeks with an excellent scar.

CASE 20.—N. R., Irish woman, aged 50. Patient first noticed a pimple over the left temporal region six years ago. Some itching existed and when scratched the lesion would scab with bleeding when the scab fell. Lesion has been treated with various plasters and caustics during the last two years. When seen, six weeks ago, the lesion comprised an area a little larger than a silver dollar, the lower half presenting a fungating ulcerating mass the size of a quarter, with a firm, indurated, pearly edge and above this several scattered, raised indurated, pearly nodules forming a creeping edge, as it were, for in this way, the patient said, the lesion had spread. A single massive exposure to radium was given to the lower ulcerating part of this lesion and, after six weeks, the lesion is entirely healed, smooth and soft, though it still is slightly discolored—a faint red. The upper part of this lesion is now under treatment.

CASE 21.—B. R., Irish woman, aged 78. Twenty years ago, what were probably seborrheic warts began to be scattered over the patient's face. These have persisted and grown in several places. Two or three of them are now undergoing distinct degeneration, others still are in a simple seborrheic verrucous condition. One year ago a patch over the lower half of the nose began to be sore and the patient now has a superficial, raw, ulcerating lesion the size of a quarter with a tendency to bleed. Above this was a blackish-looking, raised, seborrheic wart the size of a five-cent piece, which was distinctly undergoing degeneration. On the left cheek also was a degenerated, seborrheic, scaly patch, ulcerated in the center, crusted and bleeding, situated on a slightly indurated and inflamed base. Four, three and two weeks ago, respectively, single massive doses of radium were administered to these degenerated lesions and the patient now is going through the usual stage of inflammation with a thick impetiginous crusting, but with little or no discomfort.

CASE 22.—S. G. P., man aged 50. Lesion began several years ago on the right side of the nose about a half inch from the inner canthus of right eye. The lesion grew slowly, scabbed, and although the patient had had various forms of treatment, including Roentgen ray in small repeated doses and severe high-frequency cauterization, the lesion refused to heal. It slowly spread until, when radium treatment was begun, eighteen months ago, the lesion was a little larger than a quarter, had an ulcerated, raw center and distinctly raised, hard, pearly edges, forming a rather typical, crater-like ulcer. The lesion seemed firmly adherent to the underlying periosteum and had extended upward somewhat toward the inner angle of the eye. The patient having absolutely refused operative measures, radium was tried and short thirty-minute exposures at intervals of from three to five days were given over a period of six or seven weeks, and, although some reaction followed the later exposures that were given, very little healing effect apparently was produced and I refused to treat the patient further with radium.

I mention this case last because I am fairly convinced that had the massive-dose method of radium treatment been used on this patient instead of the small repeated-dose method, at least a healing would have resulted, whereas I am equally convinced that the small repeated-dose method, no matter how long persisted in, would not have influenced but perhaps might even have aggravated the condition. This was one of my first radium cases and, although I had abandoned the repeated-dose method of the treatment of cancer with the Roentgen ray and was then using only the massive-dose method, I did not feel that I was justified on a book acquaintance with radium in adopting that method at that time.

An analysis of these cases shows:

Three refused to heal entirely under the small repeated-dose method, even though numerous exposures were made and a slight reaction produced.

Three others recurred after short intervals when treated by the small repeated-dose method, though they had apparently entirely healed.

All the cases treated by the single or massive-dose method healed kindly without recurrence so far.

The cosmetic results in these cases have been all that could be hoped for, the scars being smooth, nearly level, pliable and showing a minimum amount of deformity.

CONCLUSIONS

1. Radium is an efficient and satisfactory means with which to attack these lesions if used in sufficient quantity.

2. The single or massive-dose method will probably prove to be the method of choice, as it has in the hands of some of us in the Roentgen-ray treatment of these lesions.

3. It is easier to estimate this single or massive dose because we are dealing with a stable remedy emitting a constant amount of rays, which is not the case with Roentgen rays, even with the pastiles now at our disposal.

4. The cosmetic results are at least equal to those of any other form of treatment of these lesions.

5. Its ease of application, comparative painlessness, even in the inflammatory stage, and harmless appearance recommend it to patients.

6. The length of exposures can be practically determined and depends on the amount of radium and the character of its container, its distance from the lesion, the location of the lesion, the character of the lesion—whether superficial or deep—and the age, state of health and susceptibility of the patient to other rays, such as the sun's.

7. Its two disadvantages are its high cost and the length of time of exposure in the single-dose method. This latter, however, is indirectly in proportion to the amount of radium employed.

38 E. Forty-Ninth Street.

CHOLESTERINIZED ANTIGENS *

LOYD THOMPSON, Ph.B., M.D.
Pathologist to the State Hospital for Nervous Diseases; Instructor in Clinical Diagnosis and Director of the Clinical Laboratory, University of Arkansas
LITTLE ROCK, ARK.

In a recent article,[1] Thomas and Ivy decry the use of cholesterinized antigens in the Wassermann reaction, asserting that many positive results are obtained by them in non-syphilitic cases.

Since Dec. 1, 1913, I have been using in my Wassermann work an antigen composed of human heart-extract plus 0.4 per cent. cholesterin as advocated by Walker and Swift.[2] Some of this was very kindly furnished me by Dr. Ralph W. Webster, while the remainder was prepared in my own laboratory.

In all I have used the cholesterinized antigen in 356 tests. While this number is somewhat small from which to draw definite conclusions, it is larger than that of Thomas and Ivy, and my results have been so uniformly satisfactory that I unqualifiedly endorse the use of this antigen, even over the heads of such authorities.

In beginning the use of the cholesterinized antigen I felt that a control should be used, which was done in the first fifty tests of this series. For this control an alcoholic extract of syphilitic liver was employed.

Of these fifty tests, thirty-nine were negative with both antigens. Three were 3 plus positive with both, one 2 plus positive with both. Six were 4 plus positive with the cholesterinized antigen, five of which were 4 plus positive with the syphilitic liver extract, while one was only 3 plus positive with this antigen. In one case the test was 1 plus positive with the cholesterinized antigen and negative with the syphilitic liver extract. This case was that of a very vigorously treated paretic which had before treatment given a 4 plus positive with the syphilitic liver extract.

The 306 tests in the remainder of the series were performed with the cholesterinized antigen alone. One hundred of these tests were made on known non-syphilitic persons (that is, those who denied syphilitic infection, medical students, physicians, nurses and others), soon after the appearance of the article by Thomas and Ivy. Every one of the hundred cases gave a negative reaction.

The remaining 206 tests of this series were those performed in the routine examination of suspected or known treated syphilitics in the State Hospital for Nervous Diseases. Of these, twenty-seven were 4 plus positive, seventeen 3 plus positive, two 2 plus positive, and three 1 plus positive, while 157 were negative. The three 1 plus positive and the two 2 plus positive tests were made on vigorously treated syphilitics, who had previously given stronger tests with the alcoholic extract of syphilitic liver, while the other positives were in cases in all of which there were abundant clinical evidences of syphilis. Two cases, in particular, are striking, inasmuch as they were both cases of primary syphilis. The first test in each case was performed during the first week after the appearance of the chancre and in both was negative. In one of these cases the *Spirochaeta pallida* was demonstrated at the time the blood was taken for the Wassermann, while in the other this was impossible. Both cases, however, subsequently gave 4 plus positive Wassermann tests.

From the foregoing summary of cases I think it is evident that the use of cholesterinized antigen is not attended with the dire results indicated by the authors quoted above; at least this is not the case in this series.

I think that the discrepancy in the results of my work and that of Thomas and Ivy, and perhaps other investigators, may be accounted for in the titration of reagents.

In another article[3] I have pointed out the method I employ in the titration of the Wassermann reagents, which briefly is as follows:

Absolute test conditions are imposed, that is, when complement, for example, is to be titrated, a series of tubes is set up, in each of which is placed 0.1 c.c. of a known negative inactivated serum, one unit of antigen, increasing amounts of complement, and sufficient salt solution to bring the total volume up to the required amount when amboceptor and corpuscles are subsequently added. The tubes are now incubated for half an hour at 37 C. (98.6 F.), after which one unit of previously titrated amboceptor and one unit of corpuscle suspension are added and the incubation continued one hour. The smallest amount of complement which produces complete hemolysis is determined and is one unit. In the actual test one unit and only one is used.

Amboceptor is titrated in a similar manner, and here again one unit and only one is used in the test.

In the titration of antigen the first requisite is that it must not produce hemolysis in an amount considerably in excess of the antigenic unit. The hemolytic value is determined by placing in a series of tubes increasing amounts of the antigen and adding to each, one unit of corpuscle suspension and sufficient salt solution to bring the total volume to the required amount, and incubating for one hour at 37 C.

The other factors to be determined are the anticomplementary value and the antigenic unit.

Two series of tubes are set up, and in each of one series is placed 0.1 c.c. of a known negative serum, and in each of the other series 0.1 c.c. of a known positive serum. Increasing amounts of antigen and one unit of complement are added and the tubes incubated for half an hour at 37 C. One unit of amboceptor and one unit of corpuscles are now added and the incubation continued for one hour. In the negative series the tube with the least amount of antigen which shows any hemolysis contains the anticomplementary dose, while in the positive series the tube with the least amount of antigen which shows complete inhibition of hemolysis contains the antigenic dose. The unit is the average of these two.

CONCLUSIONS

After using cholesterinized antigen in 356 tests, fifty of which were controlled by an alcoholic extract of

---

* From the Pathological Laboratory of the State Hospital for Nervous Diseases, Little Rock.

1. Thomas, B. A., and Ivy, R. R.: Use of Cholesterinized Antigens in the Wassermann Reaction, The Journal A. M. A., Jan. 31, 1914, p. 363.

2. Walker, I. C., and Swift, Homer F.: A Study of the Addition of Cholesterin to the Alcoholic Extracts of Tissues Used for Antigens in the Wassermann Reaction, Jour. Exper. Med., July 1, 1913.

3. Thompson, Loyd: Titration of Wassermann Reagents, Arch. Int. Med., to be published.

syphilitic liver, and one hundred of which were known negative cases, while of the remainder the positives were in cases which were clinically syphilitic, it is concluded that:

1. Owing to the ease of preparation of this antigen it is to be recommended.

2. It is slightly more delicate than other antigens, and is especially valuable in determining when a cure has been effected, as a positive with it persists after treatment for a longer time than with other antigens.

3. If the reagents are titrated properly, non-syphilitics will not give positive results.

Second and Sherman Streets.

HETEROPLASTIC TISSUE GRAFTING EFFECTED THROUGH ROENTGEN-RAY LYMPHOID DESTRUCTION *

JAMES B. MURPHY, M.D.
NEW YORK

The relationship between the lymphoid tissue and the mechanism which causes the failure of heteroplastic tissue grafts has been considered in a recent report.[1] The chick embryo which lacks this defensive mechanism was shown to be an excellent host for the growth of a variety of tissues derived from foreign species.[2] These embryos, however, become as resistant as the adult if supplied with a graft of either adult chicken-spleen or bone-marrow.[3] If the deductions from these experiments are correct, it should be possible to effect heterotransplantation in the adult by lessening the activity of the lymphoid tissue. As a matter of fact this has been accomplished up to the present by two distinct methods: (*a*) by the employment of subcutaneous injections of benzol (benzene, C_6H_6); (*b*) by the use of the Roentgen ray. The present preliminary report relates exclusively to the second method. As regards the use of benzol, it should be added that when the experiments succeed, which is by no means always the case, because of the toxic action of the drug, heterotransplantation of mouse sarcoma into the rat has been accomplished.

EXPERIMENTS

SERIES 1.—Twenty rats of the same size were selected, ten of which were exposed to Roentgen rays for five minutes daily for ten days. The twenty animals were then inoculated with grafts of the Ehrlich mouse-sarcoma. The mouse-tumor grew in the normal rats for the first few days, but growth ceased by the ninth to tenth day and retrogressed rapidly to complete absorption. The tumors in the animals treated with Roentgen rays continued to grow for some days longer. The period at which growth stopped varied considerably. Some ceased after the fourteenth day, others stopped at the fifteenth or sixteenth day. In one animal killed on the eighteenth day the tumor had attained the size of 1.8 by 1.3 by 1.2 cm. The microscopic examination showed the typical cells of mouse-sarcoma in an active state of proliferation, with numerous mitotic figures. There was a total absence of the round-cell infiltration normally associated with a tissue graft in a foreign species. This tumor was reinoculated into ten mice and gave rise to rapidly growing tumors in all the ten.

SERIES 2.—Ten rats of the same age were selected, of which five were subjected to Roentgen-ray treatment, five minutes a day for two weeks. The ten were then inoculated with grafts of the Ehrlich sarcoma. In the untreated animals the tumors reached their maximum size of 0.7 cm. by the ninth day, after which they quickly retrogressed to complete absorption. Among the animals treated by the Roentgen ray, two tumors stopped growing on the twelfth day and one on the thirteenth day. One tumor was still in active growth on the fourteenth day when all but a small graft was removed at operation. The remaining graft continued to grow till the nineteenth day, when the animal died of an intercurrent disease. The portion of the tumor removed at operation was inoculated into five rats which had been treated for two weeks with daily doses of the Roentgen ray. The tumors grew well in all these animals till the thirteenth day, when there was some slowing down. Two of the largest of the tumors were removed at operation and inoculated into a third series of rats which had been subjected to the Roentgen ray as in the foregoing. It is now thirty-two days since the tumor was removed from the mouse and it is still growing actively in the third series of rats. Microscopic examination of specimens removed on the twenty-fourth and twenty-seventh days show the tumors to be composed of the typical and characteristic cells of the Ehrlich mouse-sarcoma. Numerous miotic figures are present, together with evidence of vigorous tumor-growth and a total absence of the usual cellular reaction about a graft associated with the resistance to the growth of a foreign tissue in a normal animal.

The fact is well known that the Roentgen ray given in small amounts affects first and most pronouncedly the lymphoid system. The fact that heteroplastic tissues grow in animals treated with the Roentgen ray strongly suggests that it is the removal of the lymphoid barrier that makes this possible. The same conclusion was arrived at in connection with the experiments on heteroplastic tissue grafting into chick-embryos alone or with splenic or bone-marrow tissue.

* From the Laboratories of the Rockefeller Institute for Medical Research.

1. Murphy, James B.: A Source of Defense to Heteroplastic Tissue Grafting, THE JOURNAL A. M. A., Jan. 17, 1914, p. 199.

2. Murphy, James B.: Transplantation of Malignant Tumors to the Embryos of a Foreign Species, THE JOURNAL A. M. A., Sept. 14, 1912, p. 874; Transplantability of Tissues to the Embryos of Foreign Species, Jour. Exper. Med., 1913, xvii, 482; Proc. New York Path. Soc., 1912, xii, 206.

3. A full description of these results is given in the forthcoming number of the Journal of Experimental Medicine.

COMPLETE BILATERAL ISOLATED PARALYSIS OF THE SEVENTH NERVE

DEVELOPING FOUR MONTHS AFTER THE PRIMARY INFECTION OF SYPHILIS *

HARVEY M. EWING, M.D.
PHILADELPHIA

When one recalls in what close proximity the sixth, seventh and eighth nerves emerge at the base of the brain, it is hard to conceive of a lesion involving one of those nerves without affecting the others, and it is astonishing to think that any disease process could pick out the seventh nerve on each side, cause paralysis of that nerve and leave intact all the others, even the eighth, which lies in contact with it. Yet this has occurred, and there is at present such a case in the Hospital of the University of Pennsylvania.

Present Illness.—The patient, a white man, aged 32, came to the hospital Feb. 20, 1914, complaining of inability to move the muscles innervated by the seventh nerve on each side. He gave the following history of his present illness: About Jan. 1, 1914, while the patient was eating, he suddenly became aware of a sensation of "stiffness," as he expressed it,

* From the Neurological Department of the Hospital of the University of Pennsylvania.

in the left side of his face. He continued with his meal, but the sensation of stiffness persisted and in a very short time he found that he could not move the left side of his face. The next morning the stiffness and inability to move the left side of his face were unchanged, and in addition he felt dizzy when he stooped over or moved quickly. The patient could not see clearly at a distance, although he says that he could see objects close at hand and could read for a short time, but his eyes would soon "water" and everything would become blurred. There is a history of some dimness of vision in the right eye which has been present since childhood. Otherwise the patient felt perfectly well. Two days after the onset described above, while out driving, the patient became conscious of the fact that the right side of his face felt stiff and he found that he was then unable to move that side of his face. This condition of inability to move either side of his face persisted, and finally he received some sort of electrical treatment which did not affect the symptoms. After the onset the man worked for one week and then the dizziness on stooping caused him to stop work, and he has done no work since then until one week before admission. He has no pain in his face at present, nor has he had any such pain at any time during the present illness. From the onset he had a full, heavy feeling in his head, which he says felt like "something pressing down," and which lasted for one week. At the time of admission he had a dull, aching pain in the left parietal region. The patient is able to chew his food and to swallow perfectly, and fluids do not come out through his nose. There is a buzzing sensation of some sort in his left ear. He complains of no muscular weakness in any part of his body except in his face, and he says that he walks in the dark without difficulty and never stumbles, nor has he ever noticed any sensation of walking on something soft. There is no complaint of any urinary disturbance nor has he any gastro-intestinal, renal, cardiac or pulmonary symptoms.

Previous Medical History.—About Sept. 12, 1913, he had what he calls a "pimple" on the penis, which was very slow to heal under both local and internal treatment prescribed by a physician. In the latter part of December, 1913, and the first part of January, 1914, he suffered with a sore throat and a sore tongue, but there were apparently no other secondary symptoms. He has had gonorrhea. Seldom does he use any alcoholic beverage.

General Physical Examination on Admission.—The man is large, well built, well nourished and his face attracts immediate attention because of its absolutely expressionless appearance. His lower eyelids are everted and there is marked lacrimation, while his mouth droops, giving him a very dejected appearance. There is no drooling of saliva. He is unable to wrinkle his forehead, and when asked to close his eyes the upper lids move down about half way and stop while the lower lids remain everted. If the patient pulls the upper lids all the way down with his fingers, he is then able to raise them again. There is a total inability to wrinkle either side of his face, he cannot draw up or depress either corner of his mouth, and he cannot smile or whistle or make any movement with his lips. When asked to blow out a match the only motion of his lips is that due to the expulsion of air, and he is unable to extinguish the flame. The lower jaw can be moved up and down and sideways easily, and the tongue is readily protruded in the midline and moved freely in all directions. He had no difficulty in chewing his food. The eyes are moved freely in all directions and there is no nystagmus or exophthalmos. The pupils are equal in size and react readily and equally to light and in accommodation. The sensations of touch and pain are normally acute in the face. The biceps and triceps tendon reflexes are normal in promptness and extent, and sensation to pain and touch is normal in the hands and arms. In the lower extremities the patellar and Achilles tendon reflexes are normal on each side, and there is no ankle-clonus or upward turning of the great toe when the sole of the foot is stroked.

The sensation of pain and of touch is normal in both lower extremities. When the patient stands erect with toes and heels together there is no swaying, and no ataxia is detected by the finger-to-nose test. His gait is normal. Nothing abnormal was found on examination of the heart, lungs and abdomen. The urine examination has shown nothing abnormal.

Blood Examination.—The following condition was found: hemoglobin, 75 per cent.; red blood-corpuscles, 4,600,000; white blood-corpuscles, 12,800. The differential blood count was as follows: polymorphonuclear leukocytes, 84 per cent.; lymphocytes, 14 per cent.; large mononuclears, 0 per cent.; transitionals, 2 per cent.; eosinophils, 0 per cent. Feb. 21, 1914, the Wassermann reaction was tried on a specimen of the patient's blood-serum by Dr. John L. Laird and reported to be strongly positive.

Examination of the Eyes.—Dr. George E. de Schweinitz and Dr. Carl Williams reported the following findings: The pupils were equal and reacted normally to light and in accommodation. Vision in the right eye was slightly blurred for details and normal in the left eye. In the right eye is a faint corneal nebula. The fundus of each eye is healthy. Double orbicularis palsy was noted. Vision in the right eye is 4/150, in the left, 6/6.

Examination of the Ears.—Dr. Butler did not find any involvement of the eighth nerve. The drumheads were normal except for slight retraction of the left one. Before inflation hearing as tested by the tuning-fork on the right side was 9/14 and on the left side 8/14. Inflation, however, brought the hearing on the right side up to 13/14 and on the left side to 11/14. The Galton whistle was heard at 0.7 turn on each side, and ability to hear the C_4 fork was normal on each side. Low tones were heard at 3/4 on each side. Air conduction was found to be better than bone conduction. The Weber test was to the left and no involvement of the vestibular branch of the eighth nerve was detected by the revolving-chair test. Some congestion of the eustachian tubes was found, and this was thought to be sufficient to cause the slight diminution in acuteness of hearing. Dr. Butler concluded that there was no involvement of the eighth nerve on either side.

The Electrical Reactions of the Facial Muscles.—These were tested by Dr. J. W. McConnell, and it was found that the reaction to the galvanic current in the muscles of the right side of the face was in response to 5 milliamperes of current, while on the left side of the face 8 milliamperes of current were required to elicit reaction. On both sides of the face the reaction showed the vermicular, slow quality of degeneration. The serial reactions of galvanic current showed the anode closing contraction to be greater than the cathode closing contraction. There was no response on either side of the face to breaking the current. There was no reaction to stimulation by the galvanic current over the nerve. Taste sensation for sweet and salt is absent on the anterior two-thirds of the tongue.

This case, then, is certainly one of involvement of both seventh nerves below the nuclei and probably after the emergence of the nerves at the base of the brain. If the lesion were in the medulla we would find also some involvement of other tracts, but there is absolutely no evidence of such a condition. Both of the motor tracts have escaped, although almost always in syphilitic disease of both seventh nerves there is also an affection of one or both of these tracts. The sixth nerve, lying as it does quite close to the seventh, has escaped, and there is no evidence whatever to indicate that any other of the cranial nerves is involved. Even the eighth nerve, which is in absolute contact with the seventh at its emergence, has entirely escaped on both sides.

Such a paralysis as we have in this case would be very interesting if it affected the nerve only on one side, but here we have both seventh nerves involved, and they alone of all the other cranial nerves, and furthermore, each is affected in all of its branches.

As a rule, cerebral syphilis is an insidious condition, creeping on slowly; but in this case its onset was very rapid and the time of its appearance early, coming with

the secondary symptoms. Then again, the nerve on the right side was involved only two days after the paralysis of the left side, the whole clinical picture being complete in less than three days, and it had neither progressed nor receded up to the time of the patient's coming to the hospital. So this astonishing rapidity of onset and progression after the infection is one of the most remarkable features of the case.

Although such a precipitate onset is most unusual, yet it does occur, and indeed there is in the records of the dispensary for nervous diseases of the Hospital of the University of Pennsylvania and reported by Dr. William G. Spiller, another case showing just this feature. The history is in brief as follows:

The man, a negro, aged 22, on about Jan. 19, 1909, that is, two months before admission, had what he called a "chancre" on the penis. Here, as in the other case, the history of luetic infection is clear. Approximately one month after this "chancre" was acquired and while washing his face, he discovered that he could not close his right eye. On examining his face with the aid of a mirror he was surprised to find that his mouth was twisted to the left side. This paralysis seems therefore to have been quite as sudden in onset and to have followed the initial lesion even more quickly than in my case. Ten days after the paralysis of the right side of his face he became aware that the left side of his face was similarly affected, and when he presented himself at the dispensary he was unable to wrinkle either side of his forehead and could not completely close his eyelids.

Fig. 1.—Patient at rest.

Fig. 2.—Patient attempting to close his eyes and draw up the corners of his mouth before any effects of treatment were noticed.

The involvement of the opposite facial nerve in this case was not so rapid as in my own case, but the paralysis was just as complete on both sides. There was an entire absence of the nasolabial fold on each side, and the man was not able to elevate either corner of his mouth, which hung open at all times. Food collected in both cheeks and also back of the lower lip. There was no loss of sensation for pain and touch in the face, nor any pain. The ocular movements were prompt and free in all directions and the pupils were equal in size and reacted readily and equally to light and in accommodation. Biceps, patellar and Achilles tendon reflexes were all found to be exaggerated on both sides, and a bilateral ankle-clonus was found. There was no upward turning of the great toe on the stroking of the sole of either foot.

Tested by the electric current there was found to be no contraction of the muscles on either side of the face to the faradic current when applied over the facial nerve or when applied over the muscles themselves, except a slight contraction of the frontalis muscle. There was no contraction of the facial muscles to stimulation over the nerves by a galvanic current, but a tardy response was obtained when applied over the muscles. Anode closing contraction was nearly equal to cathode closing contraction on both sides of the face.

In Spiller's case there was no history of secondary symptoms of syphilis, but one or two weeks before the onset of the paralysis a stiffness of the neck was noted. Of these two cases the first is the one to which I wish to call particular attention, not only because it presents a very interesting and uncommon clinical picture, but also because of the fact that under treatment there has been some return of power in the muscles affected.

Treatment in Author's Case.—Antisyphilitic treatment was begun Feb. 25, 1914, and since that time the patient has received two intravenous injections of neosalvarsan in doses of 0.45 gm. each. This was supplemented by inunctions of unguentum hydrargyri, 1 dram a day. March 16, 1914, the salicylate of mercury was substituted for the ointment and given by intramuscular injections in doses of $\frac{1}{10}$ grain every fourth day. The patient has now had three of these injections. Galvanic electricity is also being used daily over the muscles affected.

At present he is able to close his eyes more completely than when he was admitted, and can make slight upward motion at both corners of his mouth.

[Since the writing of this report the patient has had a further manifestation of secondary syphilis in an extensive loss of hair from his head. He has also had a remarkable return of power in his facial muscles and, at present, can draw up the corners of his mouth to almost a normal degree. He has well-marked nasolabial folds and can wrinkle his forehead very slightly. He has had a fourth injection of 0.45 gm. neosalvarsan.]

In this case I would call attention especially (1) to the clear history of syphilitic infection corroborated by the Wassermann reaction; (2) to the nice selection of each seventh nerve in all its branches, with the escape of all other cranial nerves, and of the motor tracts which are almost always affected in syphilitic paralysis of the seventh nerve, and (3) to the rapidity of onset after the infection and the short interval that elapsed between the paralysis of the seventh nerve on the left and on the right side.

I am indebted to Dr. William G. Spiller for his aid in the study and preparation of this case.

3400 Spruce Street.

Our Duty to Others.—The lot of the laborer is still abandoned to the blindest individualism, and among the ruling classes the conviction has not yet penetrated that the decadence of the physical strength of the worker, the diminution of the capacity for work, the premature deaths, the degeneration of the race, the chronic diseases which require long periods of treatment in hospitals and asylums, cost the general economy of the country more than the expense which would be incurred in stamping out the evil.—Lugaro, Problems in Psychiatry.

TREATMENT OF GONORRHEA AND ITS COMPLICATIONS BY ANTIGONOCOCCIC SERUM

A PRELIMINARY REPORT OF TWENTY-FOUR CASES *

B. C. CORBUS, M.D.
Instructor in the Genito-Urinary Department, Rush Medical College
CHICAGO

In 1907, John C. Torrey[1] of the Loomis Research Laboratory of New York, read a paper before the American Congress of Physicians and Surgeons in Washington, D. C. This was an original communication describing an antigonococcic serum, prepared by injecting dead and virulent gonococci into uncastrated rams. The indications for the application of the serum were the following:

1. Those infections arising by direct extension, that is, in the prostate, bladder and epididymis in the male, and in the uterus and fallopian tube in the female.

2. Those infections arising by extension through the lymphatics or the circulatory system. These include arthritis, iritis, endocarditis, pleuritis and meningitis.

The dose as recommended at that time was 2 c.c., given every three or four days, at the discretion of the physician. Later, Herbst,[2] Belfield[3] and Schmidt[4] of Chicago and Swinburne[5] of New York reported their experience. All seem to have agreed in regard to the value of the treatment in rheumatism, but in regard to other complications, results were somewhat conflicting.

Previous to 1911, I had repeatedly given as large a dose as from 6 to 12 c.c. in two days, in cases of acute epididymitis, with surprising results. In 1911, I had a beautiful illustration of the application of this serum in a case of gonorrheal rheumatism accompanying prostatic infection: Case 15. At this time, 16 c.c. were given in three days. A complete cure was obtained in two weeks.

Stimulated by the work of Theobald Smith[6] and Rufus Cole[7] in antipneumococcic serum and George Weaver[8] in antistreptococcic serum, in September, 1913, I made a careful survey of my cases already treated and determined to adopt a larger dose and

* Read before the Chicago Medical Society, March 9, 1914.

1. Rogers, John, and Torrey, John C.: The Treatment of Gonorrheal Infections by a Specific Antiserum, The Journal A. M. A., Sept. 14, 1907, p. 918.
2. Herbst: Illinois Med. Jour., 1908, xiii, 689.
3. Belfield, Illinois Med. Jour., 1908, xiii, 689.
4. Schmidt: Therap. Gaz., 1909, xxvi, 609.
5. Swinburne, G. K.: Tr. Am. Urol. Assn., 1909, iii, 170.
6. Smith, Theobald: An Attempt to Interpret Present-Day Uses of Vaccines, The Journal A. M. A., May 24, 1913, p. 1591.
7. Cole, Rufus: Treatment of Pneumonia by Means of Specific Serums, The Journal A. M. A., Aug. 30, 1913, p. 663.
8. Weaver, George H.: Antistreptococcus Serum, The Journal A. M. A., Aug. 30, 1913, p. 661.

DETAILS IN TREATMENT OF TWENTY-FOUR GONORRHEA

Case	Diagnosis	Duration	Previous Treatment	Gonococci Present	Symptoms	Urine Glasses *	Complement Fixation
1. R.	Acute anterior and posterior urethritis.	8 days	None	Yes	Frequent and painful urination.	I tr. II tr.	Negative
2. C.	Same	2 weeks	None	Yes	Same	Same	Negative
3. J. P.	Same	4 weeks	Hand injec'n.	Yes	Discharge	Same	Positive
4. E. R.	Acute anterior urethritis	1 day	None	Yes	Discharge and painful urination.	I tr. II cl.	Negative
5. E. McE.	Same	4 days	None	Yes	Same	Same	Negative
6. J. S.	Chronic urethritis with fistula.	8 months	Yes	Yes	Infected sebaceous cyst	Same	Negative
7. Dr. S.	Urethritis totalis with prostatitis.	4 weeks	Yes	Yes	Discharge and severe strangury.	I tr. II bloody	Positive
8. D. D.	Same	18 months	Yes	Yes	Discharge	I tr. II tr. III massage tr	Positive
9. C. G.	Urethritis totalis prostatitis with stricture.	2 years	Yes	Yes	Discharge	Same	Positive
10. E. G.	Urethritis totalis and double epididymitis.	3 days	None	Yes	Referable to epididymis	I tr. II tr.	Positive
11. H. A.	Prostatic abscess	2 days	Yes	Yes	Acute retention urine 28 hours.	I tr. II tr.	Positive
12. W. S.	Epididymitis and rheumatism, acute.	3 months	Yes	Yes	Discharge, epidid. Rheumatism right and left knee.	I tr. II tr.	Positive
13. J. P.	Rheumatism, acute	6 weeks	None	Yes	Rheumatism of right wrist and ankles.	I tr. II tr.	Positive
14. G. D.	Rheumatism, acute	2 weeks	Internal	Yes	Large swelling of left knee; discharge.	I tr. II tr.	Positive
15. E. R.	Rheumatism, acute	3 weeks	None	Yes	Severe pain in left hip; discharge.	I tr. II cl. III massage tr	Not made
16. A. G.	Rheumatism, acute	3 weeks	Yes	Yes	Discharge and swelling of right ankle.	I tr. II tr. III tr.	Positive
17. J. McG.	Rheumatism, chronic	4 months	Yes	Yes	Knees and ankles quite tender; discharge.	I tr. II tr. III tr.	Positive
18. G. L. E.	Rheumatism, chronic	6 months	Irrigations, mud-baths.	Yes	Pains in heels and toes; discharge.	I tr. II tr. III tr.	Not made
19. G. L. G.	Rheumatism, chronic	4 months	Hand injections; mud-baths.	Yes	Pains in right shoulder and left ankle; discharge.	I tr. II cl. III massage tr	Positive
20. J. G.	Rheumatism, chronic	3 months	Bier hyperemia, injections.	Yes	Marked swelling right knee.	I tr. II tr. III tr.	Positive
21. J. H.	Endometritis, chronic	Indefinite	None	Yes	Leukorrhea for three or four years.	No bladder symptoms.	Positive
22. M. S.	Endometritis, chronic	Indefinite	None	Not present	Leukorrhea	Same	Positive
23. M. O.	Endometritis, chronic	6 months	Yes	Yes	Leukorrhea	Same	Positive
24. M. S.	Endometritis, salpingitis, chronic.	Indefinite	None	Yes	Pelvic pain; confined to bed; leukorrhea.	Same	Positive

* tr. = turbid; cl. = clear † Second and conclusive examination.

an intravenous administration as recommended by Cole and Weaver. As the complement-fixation test for gonorrhea is a reliable guide for systemic invasion, I selected this method of diagnosis as a key to the administration of the serum.

Of the twenty-four cases herein reported, three are from the service of Drs. Frank E. Simpson and Frederick G. Harris at the Cook County Hospital, and one is from the practice of my assistant, Dr. L. D. Smith. The other twenty are from my clinic at the Post-Graduate Medical School and my own private practice. The antigonococcic serum used here was obtained partly from the experimental department of Parke, Davis & Co., and from the open market. The two seem to be identical.

As suitable facilities for hospitalizing this class of cases were not available, no apology is offered for absence of temperature charts and complete blood-pictures. At the beginning of the work, a daily leukocyte count was made before, during and for a few days after the injections; but as the findings were of no actual value, the routine was abandoned.

As the proper management of every case of specific urethritis is controlled by daily microscopic examinations of the discharge, particular attention has been given to this valuable aid, as will be seen from the photomicrographs. The subsequent complement-fixation tests as a final conclusion as to whether or not a cure has been effected, while not at all complete in the table, will be concluded as soon as it is possible to reexamine the cases.

Patients 1 and 2 are clinic patients whom I sent into the hospital under special arrangement. Each received 12 c.c. of antigonococcic serum administered intravenously on three successive days. There was no increase of leukocytes or temperature rise during their three days' sojourn in the hospital, and as far as I know there was no serum reaction. Likewise there was not the slightest improvement.

As complications in ambulatory patients were feared, the remainder of the injections were given deep in the gluteal region, intramuscularly. I believe, however, that the intravenous administration, when feasible, would be followed by a more rapid recovery with a possibility of using less serum.

The same conclusions were drawn from Cases 4 and 5, as the infection was confined to the narrow urethral domain with the absence of the complement-fixation test.

Case 6 (Figs. 1, 2 and 3), with a negative reaction, is the only other exception. This patient received 36 c.c. intramuscularly, and this passive immunity was stimulated by three injections of gonococcus vaccine with a prompt and complete cure. This patient presented an abnormality in the way of a sebaceous cyst at the junction of the glans penis and urethra, and

PATIENTS WITH ANTIGONOCOCCIC SERUM

Antigonococcus Serum	Subsequent Symptoms	Serum-Sickness	Discharge	Complement Fixation †	Remarks
36 c.c. intravenously.	No improvement.....	None	No improvement.	Not made....	Clinic patient.
Same	No improvement.....	None	No improvement.	Not made....	Clinic patient.
36 c.c. intramuscularly.	No improvement.....	Marked	No improvement.	Not made....	Hemorrhagic urticaria.
Same	No improvement.....	Marked	No improvement.	Not made....	Serum-sickness mistaken for scarlet fever by family physician.
Same	No improvement.....	Slight	No improvement.	Not made....	Treatment seemed to lower resistance.
Same	Rapid improvement with cure.	Marked	Disappeared	Not made....	Patient confined to bed with arthritis and extensive itching.
18 c.c. intramuscularly.	Rapid improvement.....	Slight	Disappeared	Not made....	Discharge returned with gonococci; dose too small.
36 c.c. intramuscularly.	Rapid improvement.....	Slight	Disappeared	Positive	Under treatment for 2 months previous to injection.
Same	Rapid improvement.....	Marked	Gonococci disappeared.....	Negative	Opportunity for many examinations.
Same	Rapid improvement.....	Slight	Same	Negative	Saline irrigations given.
12 c.c. intramuscularly.	Rapid improvement.....	Slight	Gonococci disappeared, then reappeared.	Positive	Dose too small.
36 c.c. intramuscularly.	Marked improvement; epididymitis, rheumatism.	Slight	Gonococci disappeared.....	Not made....	Ward patient, Cook County Hospital, ready for discharge.
Same	Rapid improvement.....	Marked chill and vomiting	Not obtainable...	Not made....	Symptomatically cured in three weeks; hospital patient.
Same	Extremely rapid improvement.	Slight	Gonococci disappeared.....	Not made....	Elevated railroad guard; went to work one week after injection.
16 c.c. intramuscularly.	Rapid improvement.....	None	Gonococci disappeared.....	Not made....	Patient completely cured in two weeks.
18 c.c. intramuscularly.	Marked improvement, but relapsed.	None	No improvement	Not made....	Dose too small.
36 c.c. intramuscularly.	Marked improvement.....	Marked	Not obtainable..	Not made....	Patient symptomatically cured in two weeks; hospital patient.
18 c.c. intramuscularly.	Slow improvement.....	None	Gonococci disappeared.....	Not made....	Dose too small. Discharged at end of two months.
Same	Slow but complete disappearance.	None	Same	Negative	Dose too small. Discharged at end of two months.
Same	Slight improvement.....	None	Disappeared	Not made....	Dose too small. Symptoms still present when patient left.
36 c.c. intramuscularly.	Discharge, only Gram-positive.	Severe; confined to bed	Disappeared	Negative	Ideal recovery.
Same	None	Slight	Disappeared	Not made....	Patient known to have infected another before treatment. Did not after treatment.
Same	Rapid improvement.....	Marked	Disappeared	Not made....	Patient has not infected husband since treatment.
45 c.c. intramuscularly.	Rapid improvement.....	Very severe	Greatly improved	Not made....	Patient treated too recently for complete report.

Fig. 1 (Case 6).—Appearance of discharge the day before injection. Absence of gonococci.

Fig. 2 (Case 6).—Appearance of discharge on the day following the three injections. Fourth day of observation. Gonococci present.

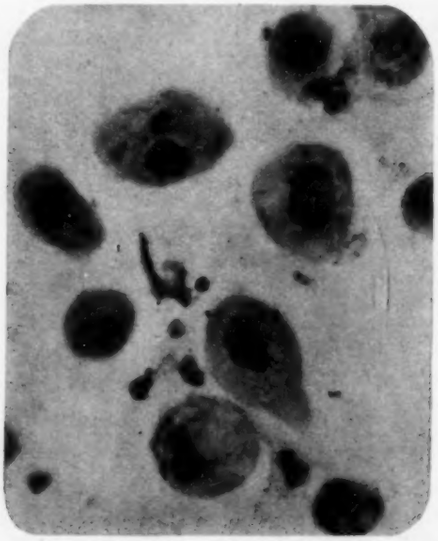

Fig. 3 (Case 6).—Appearance of discharge ten days later. Serum fortified by gonococcus vaccine, as suggested by Dr. Theobald Smith. Large number of epithelial cells, few leukocytes, no gonococci.

had been under observation nine months with a previous operation.

In all the rest of the series in which the quantity of the serum given has been 36 c.c. or over, the results have been prompt and very encouraging.

Invariably when the amount of serum injected was under 20 c.c., the improvement was slow or a relapse occurred, as shown in Cases 7, 11, 15, 16, 18, 19 and 20.

Fig. 4 (Case 9).—Appearance before injection. Large number of gonococci present.

Case 11 is most instructive, as will be seen by the photomicrographs. This patient received his first injection of 12 c.c., but through a misunderstanding did not receive the two subsequent injections. Later, the microscopic examinations of the discharge proved

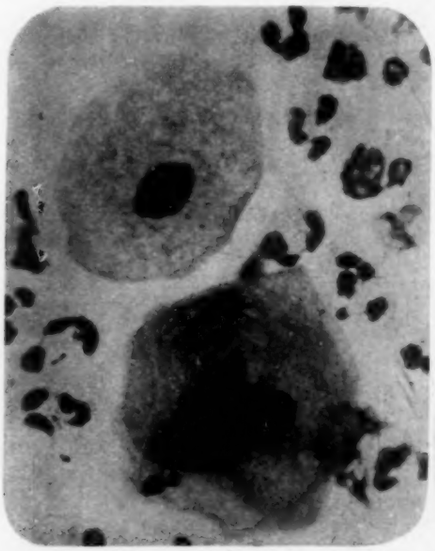

Fig. 5 (Case 9).—Appearance four days later. Epithelial cells and leukocytes. No gonococci.

so conclusively the value of the serum that they are herewith given in detail (Figs. 7, 8 and 9).

I thought that the one injection of 12 c.c. had cured the patient, but I was very much disappointed to note a recurrence, as seen in the last photomicrograph. I have not the slightest doubt that had the full 36 c.c. been given, the patient would have had a prompt and permanent result.

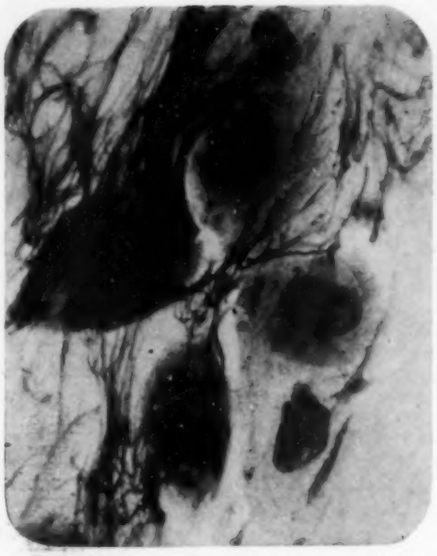

Fig. 6 (Case 9).—Appearance nine days later. Epithelial cells and mucus; no gonococci.

Often patients who had been injected with 16 and 18 c.c. had shown marked improvement from the point of view of the discharge, but later invariably relapsed. My reasons for giving from 36 to 45 c.c. of serum as sufficient quantity to produce a curative effect are wholly arbitrary and based on my previous experience. In every case in which 36 c.c. or over have been given, no treatment has been instituted except prostatic massage and urethral massage over a sound. Case 10, however, was an exception, as the patient received cleansing urethral irrigations of normal saline solution.

For the serum-sickness, free catharsis, with salines, together with bland salves, was given on the slightest appearance of urticarial eruptions.

CONCLUSIONS

1. The complement-fixation test is a reliable guide in the administration of the serum. When the test is negative, the serum should not be used.

2. The intensity of the positive complement-fixation test offers a reliable guide as to whether or not the serum will be efficient, as the efficiency and intensity are in direct proportion.

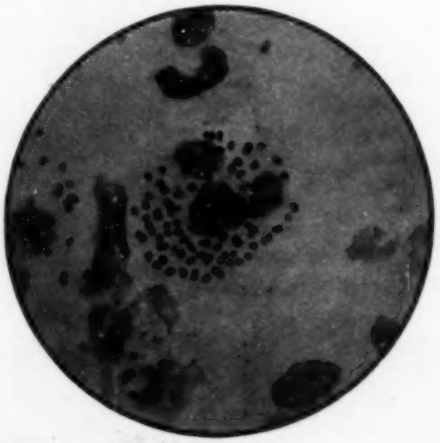

Fig. 7 (Case 11).—Appearance of discharge before injection. Gonococci present.

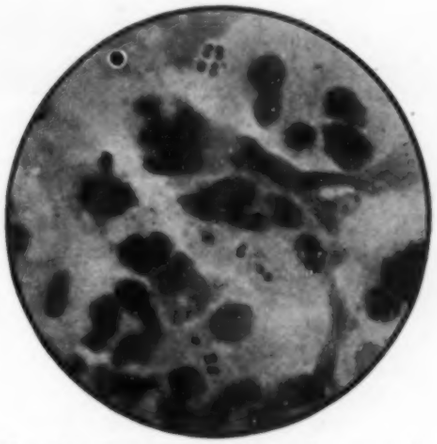

Fig. 9 (Case 11).—Twenty-one days later. Recurrence showing gonococci appearing again. Dose too small.

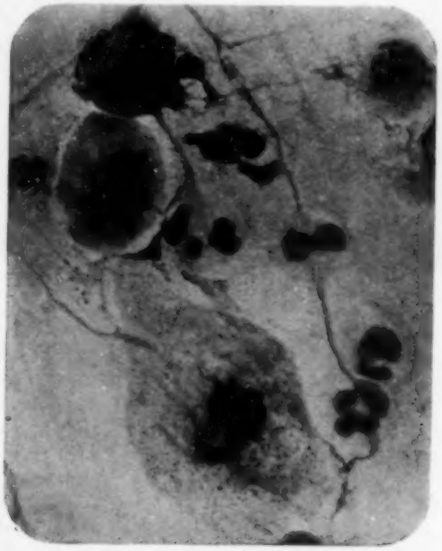

Fig. 8 (Case 11).—Three days afterward. Epithelial cells and leukocytes. No gonococci present.

3. The amount injected should be at least from 36 to 45 c.c., administered intramuscularly, from 12 to 15 c.c. a day, for three days.

4. Serum-sickness, if distressing, should not be alarming.

5. A negative complement-fixation test after two or three months shows a complete cure.

32 North State Street.

Report on Tuberculosis.—The annual report of the Association of Tuberculosis Clinics shows that there were 16,016 new cases of tuberculosis in Greater New York in 1913 and that the twenty-nine clinics of the association showed an attendance of 34,861. The records of the Department of Health show a more or less constant total of 30,000 registered cases, while its report for last year showed 22,761 new cases, including 6,000 not found. The number of children under clinic care increased from 1,780 in 1909 to 8,392 in 1913. In 1909 there were 41,870 visits of nurses and in 1913, 84,305. The report assumes that the gains in clinic work show a more complete and efficient working of the district system, recognition of the value of preventive work with children and that definite results have followed educational propaganda.

AN INVESTIGATION OF THE CAUSES OF FAILURE IN COW-POX VACCINATION

JOHN NIVISON FORCE, M.D., M.S.
Assistant Professor of Epidemiology, University of California, Department of Hygiene
BERKELEY, CAL.

This paper is the record of an investigation of the causes of failure in the cow-pox vaccination of persons entering the University of California with no visible evidence of a previous vaccinia.

Fig. 1.—Vaccination equipment. On the stand in front of the gas-burner is a glass containing the scarifying chisels. The virus is kept in a vial in the bowl, which contains cracked ice. The covered dish contains sterile toothpicks, which are handled by means of the dressing-forceps. Dressings are shown on the table to the left of the stand.

VACCINATION PREVIOUS TO THE BEGINNING OF THE INVESTIGATION

Regulations: All intrants not showing a vaccination scar were vaccinated. Failure to "take" resulted in a repetition of the vaccination twice during the first term, and once every succeeding term during residence at the university.

Technic: The arm was scrubbed with soap and sterile water, rinsed with alcohol and dried with cotton. An area about 5 mm. square was scarified with a dry vaccine point, which was then wiped on the serum exuding from the scarified spot. A gauze square was then applied to the wound and was secured by four strips of adhesive tape. Verbal instructions were given the person regarding the protection of the arm, and return for the renewal of dressings.

TABLE 1.—VACCINATIONS, ACADEMIC YEAR 1910-1911

Result	Intrants					Old Students			All Vaccinated	
	Insertions			Total	Per Cent.	Insertions 4th or Over	Total	Per Cent.	Total	Per Cent.
	1st	2d	3d							
Take	166	75	19	260	86.8	0	0	0	260	78.4
Fail	9	2	30	41	13.2	32	32	100	73	21.6

Results: Table 1 shows the result of vaccinations performed by this method during the academic year 1910-1911.

INVESTIGATION OF THE CAUSES OF FAILURE

The results shown in Table 1 are typical of the period previous to the beginning of the investigation. The opening of each semester brought a number of old students to be vaccinated before study lists could be approved for the ensuing period. As may be inferred, "takes" among these chronic "failures" were rare, and the administration of revaccination became more difficult with the steady growth of the university. In the absence of a scar, however, revaccination was continued in the hope of securing definite evidence of immunity.

With a desire to simplify the administration of revaccination, an investigation of the causes of failure was begun in August, 1911. This investigation was divided into three parts:

1. Development of a uniform technic.
2. Investigation of virus.
3. Investigation of alleged immunity against cow-pox.

1. *Development of a Uniform Technic*

Preparation: The arm was scrubbed with ether, which evaporated rapidly and eliminated the necessity of drying.

Scarification: An attempt was first made to follow the technic described by Pirquet,[1] which consists of rotary scarification by means of a rounded blunt vaccination chisel through a drop of virus placed on the skin. It was found more satisfactory, however, to scarify the skin by the rotation of a sharp square-cornered dental scaling-chisel, which removed a small circle of epidermis 2 mm. in diameter, without bruising the tissue.

Application of Virus: As it was found difficult to gage the depth of scarification through a drop of opaque fluid, the virus was applied to the scarified spots by means of a sterile wooden toothpick. The amount adhering to a flat-ended toothpick dipped into glycerinated virus was sufficient for the inoculation of the three scarified spots constituting a vaccination.

Fig. 2.—Rotary scarification by means of the modified von Pirquet scarifier.

Dressing and Subsequent Care: No change was made in the method of dressing except that the return date (five days after vaccination) was stamped

1. Pirquet: Klinische Studien über Vakzination und vakinale Allergie, Vienna, F. Deuticke, 1907.

on the adhesive tape. A printed card of instructions regarding the care of the vaccinia replaced the verbal directions formerly given. No antiseptics, salves or shields were used. On the tenth day, when area formation normally occurs, a few persons complained of soreness in the arm. This was much relieved by the application of a compress, kept moist with 50 per cent. alcohol. The inflammation subsided in twenty-four hours. In the absence of large scarified spots there were no "bad" arms.

Fig. 3.—Applying virus by means of a sterile toothpick.

Area formation on the tenth day is evidence that the growth of the colony of vaccine organisms has been arrested by the antibodies which have been formed by the stimulation due to the organism, or in other words that immunity has been established.

The practice, advocated by Dyer,[2] of destroying the colony by opening the vesicle and applying phenol (carbolic acid) before area formation occurs, naturally results in a reduction of the size of the dose of vaccine organisms. Immediate revaccination in the cases in which the dose has been insufficient would produce a vesicle. Revaccination when a condition of active immunity exists would only result in the reaction of immunity as hereinafter described.

Records: A card index was kept of all vaccinations, and notices were sent to those persons not reporting by the end of the tenth day following the vaccination. Disregard of the notices resulted in termination of the student's registration in the university.

Table 2 shows the results of vaccinations by the modified Pirquet technic during the first term of the academic year 1912-1913.

TABLE 2.—VACCINATIONS, AUGUST-DECEMBER, 1912

Results	Intrants					Old Students			All Vaccinated	
	Insertions 1st	2d	3d	Total	Per Cent.	Insertions 4th or Over	Total	Per Cent.	Total	Per Cent.
Take ...	259	3	0	262	89.8	5	5	14.7	267	82
Fail ...	1	0	29	30	10.2	29	29	85.3	59	18

A comparison of Tables 1 and 2 gives the following points in favor of the modified Pirquet technic:

1. The results are more uniform. On first insertion there were 95.8 per cent. of all takes as contrasted with 63.8 per cent. by the old method.

2. The percentage of failure is lower. There were 10.2 per cent. of failures for intrants and 18 per cent. for all vaccinated, as against 13.2 per cent. for intrants and 21.6 per cent. for all vaccinated by the old method.

In addition to the results shown by statistics there are certain other advantages.

1. Safety. Cross scarification, which is forbidden by law in Germany, favors the growth of anaerobic bacteria under the crust which forms on the area of abrasion, where the resistance is lowered by the action of the vaccine organism. The unsightly scars, and the tales of "awful" takes so common among the American vaccinated, are witnesses of appalling ignorance of this fact. The circular scarification gives absolute control of dosage and there is no tendency to confluence of the vesicles.

2. Economy. With 1 c.c. of glycerinated virus 285 vaccinations have been performed.

3. Absence of shock. Owing to the speed of scarification, the depressant psychic effect of the slow scratching by point or needle is eliminated.

A final change in the technic was made in August, 1913, by the use of chisel with a carbon steel point which could be dipped into alcohol and flamed without affecting the cutting edge. The dental chisels formerly used had been kept in compound solution of cresol and rinsed in sterile water before each vaccination, and it was believed that some of the failures might be traced to the antiseptic effect of a

Fig. 4.—Dressing of gauze and four adhesive tapes, one of which is stamped with the date for return.

residual quantity of compound solution of cresol adhering to them when applied to the arm. The use of alcohol for cleansing the arm was also resumed.

2. *Investigation of Virus*

The percentage of failure having been somewhat reduced by uniformity of technic, the next step was an investigation of the virus.

Following a visit to the Vaccine Laboratory of the New York Health Department, we adopted the sug-

2. Dyer: The Way to Vaccinate, Am. Jour. Trop. Dis. and Prev. Med., 1913, i, 425.

gestion of Dr. F. S. Fielder of that institution that virus containers be kept in cracked ice. The New York Vaccine Laboratory produces a virus which is never more than four successive transfers from a human case of vaccinia, and is guaranteed for 100 per cent. of takes in primary vaccination. Through the kindness of Dr. Fielder, the university was supplied with three 1-c.c. vials of this virus for comparison with the product heretofore used. The vials of virus were shipped from New York in a vacuum bottle, and after removal from the bottle were kept iced until used.

In Table 3 the two New York vials No. 2180 and 2181 have been designated by the letter "N." The revaccinations were performed with New York vaccine No. 2182, which is designated "N. Y." A 1-c.c. vial of fresh virus produced locally was used for comparison. In the tables it is designated by the letter "C." A few vaccinations were performed with

TABLE 3.—COW-POX VACCINATIONS, JANUARY-MAY, 1913: REACTIONS GROUPED ACCORDING TO CHARACTERISTICS OF SCAR AND VIRUS USED

	Virus	Vaccinia No.	Vaccinia %	Vaccinoid No.	Vaccinoid %	Failure No.	Failure %
No scar:							
Never vac.....	C	35	90	2	5	2	5
	N	3	100	..	..	..	..
Vac. No scar...	C	53	52	18	18	30	30
	N	12	24	12	24	27	52
Age of scar:							
Under 10 years..	C	33	11	110	39	141	50
	N	16	43	11	30	10	27
10 to 20 years..	C	46	12	153	39	196	49
	N	15	31	18	37	16	32
Over 20 years...	C	34	29	33	28	49	42
	N	14	70	4	20	2	10
Size of scar:							
Under 15 mm...	C	58	14	152	35	220	51
	N	26	46	19	34	11	20
15 to 20 mm....	C	31	14	89	41	96	45
	N	9	35	9	35	8	30
Over 20 mm....	C	19	17	44	39	50	44
	N	6	38	3	19	7	43
Character of scar:							
Pitted	C	22	10	82	36	125	54
	N	5	28	6	33	7	39
Keloidal	C	21	13	73	44	70	43
	N	11	50	6	27	5	23
Smooth	C	44	20	93	40	93	40
	N	22	47	17	36	8	17

Observations completed:

Virus C	935
Virus N	160
Total	1,095

what is known as a "green" virus, being a more recent production than usually marketed. This virus is designated by the letters "C. S." These two viruses were originally derived from small-pox cases, though modified by several passages through calves.

A comparison of Viruses C and N in Table 3 shows that, with one exception, the percentage of reactions characterized by sufficient vesicle formation to be diagnosed as vaccinias is higher for the N virus, while the percentage of failure is correspondingly lower. The exception to this rule is found in the reactions of those persons having no scar though admitting previous vaccination. At first glance it appears that the N virus is here credited with a high percentage of failure. This percentage, however, is influenced by the fact that all unscarred old students who reported three or more failures in the university, and were usually highly immunized, were vaccinated with Virus N, while intrants giving a history of previous failures were vaccinated with Virus C.

Tables 4 and 5 show a reasonable consistency on the part of each virus under observation. The number of reactions secured by immediate revaccination of the C failures with N and N. Y. virus is a further favorable comment on the New York method of preparation, which as before stated consists essentially in permitting only four transfers from human vaccinia case to human vaccination subject.

TABLE 4.—COW-POX VACCINATIONS, JANUARY-MAY, 1913: REACTIONS OBTAINED BY REVACCINATION OF PERSONS FAILING AFTER FIRST VACCINATION OF THE SEMESTER

Failing Virus	Revaccination Virus	Vaccinia	Vaccinoid	Failure
PERSONS WITH NO SCARS				
C	C	..	..	1
	C. S.	..	..	4
C	N	3	5	9
	N. Y.	..	..	2
N	N	..	1	3
	N. Y.	..	3	9
N	C. S.	..	3	3
PERSONS HAVING SCARS				
C	C	1	1	12
	C. S.	1	3	17
C	N	9	32	38
	N. Y.	..	6	6
N	N	1	..	6
	N. Y.	..	..	1
N	C. S.	..	..	1

A summary of Tables 3, 4 and 5, with due allowance for twenty-four persons failing twice during the academic year, gives 15 per cent. of failure in unscarred persons vaccinated during the second semester, and an average of 16 per cent. of failure for the academic year 1911-1912.

3. Investigation of Alleged Immunity against Cow-Pox

By attention to the technic and virus, the failures in unscarred persons have been reduced from 21 to 16 per cent. There remains still the question of alleged natural immunity to cow-pox vaccination.

TABLE 5.—COW-POX VACCINATIONS, JANUARY-MAY, 1913: REACTIONS OBTAINED BY THIRD VACCINATION OF PERSONS FAILING AFTER FIRST AND SECOND VACCINATIONS OF THE SEMESTER

Failing Virus	Revaccination Virus	Vaccinia	Vaccinoid	Failure
PERSONS WITH NO SCARS				
N	C. S.	..	2	..
PERSONS WITH SCARS				
C	C	..	..	2
	C. S.	..	..	1
N	N	..	..	11
	N. Y.	..	..	1
N	C. S.	..	1	3

The small-pox epidemic in Berkeley at the opening of the second term of the academic year 1912-1913, gave opportunity of observing the course of revaccination in persons with scars of various kinds who reported for vaccination "to be on the safe side."

The experience gained in over one thousand revaccinations observed at that time confirmed the observa-

tions of Jenner,[3] Pirquet and others regarding the difference between a true primary vaccinia, and the condition produced by revaccination, which the French authors call "vaccinoid."

In general a vaccinia observed five days after vaccination is characterized by a yellowish vesicle surrounded by a narrow red areola, while the vaccinoid of the same age has a comparatively smaller vesicle surrounded by a wider areola. When no vesicle develops and the areola appears and subsides early we have the immediate reaction of Pirquet, which was first described by Jenner as "sudden efflorescence."

Previous to January, 1913, only the unscarred intrants had been vaccinated. Certain changes in the state vaccination law caused the regents of the university to issue an order that, in addition to unscarred intrants, all other intrants showing a scar over seven years old must be vaccinated. This order gave an excellent opportunity for the following application of the test of immunity:

If a student had an old, or otherwise unsatisfactory scar, he was vaccinated in two spots on the arm, a control spot being scarified and rubbed with the glycerin diluent used in the preparation of vaccine.

Fig. 5.—Vaccinia; sixth day; no previous take. Typical large vesicles with small areolae.

Fig. 6.—Vaccinia; eleventh day; no previous take.

Fig. 7.—Vaccinoid; twenty-four hours. The upper point is a control and contains no virus. Note areolae around lower points which contain virus.

THE TEST OF IMMUNITY

During the course of some observations and measurements of these areolae of immediate reactions, it occurred to me that this reaction might be used as a test of those failures which persisted each year in spite of our best efforts with uniform technic and cold virus. In a previous paper[4] some of the characteristic cases were described, but a general application of the test was not made until the opening of the academic year 1913-1914.

Observations were made at twenty-four-, forty-eight- and seventy-two-hour periods after vaccination. If either of the vaccinated spots showed an areola of 5 mm. or over (with or without papule) at the end of twenty-four hours, which areola (or papule) had decreased at the time of the seventy-two-hour observation, it was considered a *reaction of immunity* due to the presence in the blood of the individual of antibodies against vaccine virus. The student was excused from further vaccination. If either of the vaccinated spots showed an areola at the end of twenty-four hours which developed into a small vesicle, maturing on the fifth or sixth day and then

3. Jenner: An Inquiry into the Causes and Effects of Variolae Vaccinae, 1798.

4. Force, J. N.: The Skin Reaction after Cow-Pox Vaccination, California State Jour. Med., 1913, xi, 290.

TABLE 6.—COW-POX VACCINATIONS, AUGUST-DECEMBER, 1913; REACTIONS GROUPED ACCORDING TO CHARACTERISTICS OF SCAR

	Vaccinia						Vaccinoid						Reaction of Immunity					
	Intrants		Old Students		Out	%	Intrants		Old Students		Out	%	Intrants		Old Students		Out	
	M	W	M	W			M	W	M	W			M	W	M	W		
No scar:																		
Never vaccinated	157	116	..	..	..	93	10	7	..	..	..	6	3†	..	..	..	..	1
Vaccinated. No scar	27	20	..	..	..	54	6	5	3	..	..	16	4	6	10	6	..	30
Age of scar:																		
Under 10 years	5	17	..	..	..	27	22	18	..	..	..	50	13	6	..	..	..	23
10 to 20 years	4	8	..	..	..	12	27	26	..	..	..	52	10	26	..	..	1	36
Over 20 years	..	1	..	..	..	5	4	5	..	..	2	52	4	4	..	..	1	43
Size of scar:																		
Under 15 mm	4	14	..	..	..	26	18	15	..	..	..	49	6	11	..	..	..	25
15 to 20 mm	2	3	..	..	..	8	13	20	..	..	..	50	14	13	..	..	..	42
Over 20 mm	..	1	..	..	..	2	11	9	..	..	2	51	7	11	..	..	2	47
Character of scar:																		
Pitted	..	1	..	..	..	5	6	4	..	..	..	45	3	7	..	..	1	50
Keloidal	1	..	..	..	..	3	10	7	..	..	2	53	8	7	..	..	1	44
Smooth	8	23	..	..	..	22	36	37	..	..	..	51	17	22	..	..	..	27

Total observations completed 587
Left university 2

Total vaccinations 589

† One of these three had small-pox one year ago; one had chicken-pox three years ago.

* In this table, M means men, and W women.

rapidly subsiding, the reaction was considered a *vaccinoid*.

If there was no change until the third day, and then a small areola began to form, the case would be *vaccinia*. If there was no change by the fifth day, the failure was charged to technic and the experiment was repeated. If a case was not seen until the fifth day, and there were no signs of a recent local reaction, the vaccination was repeated, and daily observations were made, for all signs of the reaction of immunity may be gone by the fifth day.

Results of the Application of the Immunity Test.

Out of 589 persons vaccinated during the semester August-December, 1913, complete records have been obtained from all but two. In all doubtful cases a revaccination has produced one of the characteristic reactions.

Table 6 classifies the results of this series of vaccinations in terms of the attributes of the scars, as well as under the three reactions to vaccine virus: vaccinia, vaccinoid and the reaction of immunity.

A few points in this table are worthy of notice.

1. Of the three previously unvaccinated intrants giving the reaction of immunity, one had a definite history of small-pox, one had a history of recent chicken-pox (which might have been small-pox) and the third denied having had either small-pox or chicken-pox.

2. Sixteen unscarred old students and ten unscarred intrants gave the reaction of immunity. This would imply the presence of antibodies against vaccine virus, due to repeated doses of a virus in each instance incapable of *growth*, but capable of producing immunity; that is, analogous to a bacterial vaccine made from a killed culture.

3. The highest percentage of reactions of immunity occurred in persons having well-pitted scars.

4. No natural immunity against vaccine virus was discovered. Such a person would have no history of vaccinations nor would he give a *specific* reaction of immunity to vaccine virus.

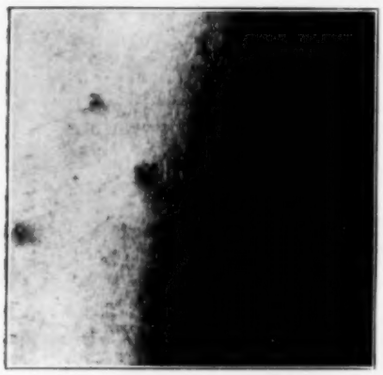

Fig. 8.—Vaccinoid; forty-eight hours. Note beginning papules on two lower points.

Fig. 9.—Vaccinoid; fourth day. Typical small vesicle on large areola. The area formation occurred on the fifth day, and the scab was removed on the seventh day. Subject had large keloidal scar from vaccinia twenty-six years before.

Fig. 10.—Reaction of immunity twenty-four hours after vaccination. The upper spot is the control. There are 5 mm. areolae around both vaccinated spots.

Fig. 11.—Reaction of immunity forty-eight hours after vaccination. The areolae have increased slightly and there is papule formation.

Fig. 12.—Reaction of immunity seventy-two hours after vaccination. The areolae are growing smaller and the papule is disappearing. By the fifth day there were only signs of trauma, and the vaccination would have been classed as a failure if the first observation had been made at that time.

Fig. 13.—Vaccinia; completed scar; modified von Pirquet method.

The following cases serve to illustrate certain points which must be considered in the application of the test:

CASE 1.—G. R., intrant, vaccinated just before entrance with no result, was vaccinated Sept. 22, 1913.

September 26: No reaction.

September 29: Revaccinated with same virus, in two spots with a control scarification.

September 30: No reaction in vaccinated spot.
October 1: No reaction.
Jan. 5, 1914: Revaccinated with fresh virus in two spots with a control scarification.
January 6: No reaction in vaccinated spots.
January 7: Seven mm. areolae around vaccinated spots.

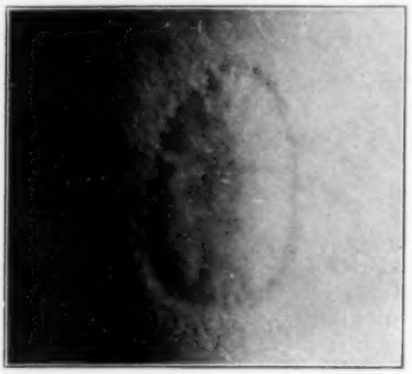

Fig. 14.—The ordinary type of vaccination scar.

January 10: Vesicle in vaccinated spots, but 20 mm. areolae in place of the ordinary small areola hardly larger than the vesicle.

CASE 2.—P. A., intrant, never vaccinated, was vaccinated Oct. 1, 1913.
October 6: No reaction.
October 13: Revaccinated with same virus in two spots with a control scarification.
October 14, 15, 16 and 20: No reaction in vaccinated spots.
October 27: Revaccinated with a fresh virus, two spots, and a control sarification.
October 21: No reaction.
November 3: Vesicles on both vaccinated spots, but areolae larger than normal for primary vaccinia.

These two cases were stragglers vaccinated during the month following the general vaccination of intrants. The repeated vaccinations with an inert virus probably served to sensitize them. This accounts for the large areolae occurring in conjunction with the formation of vaccinia vesicles.

CASE 3.—L. S. H., old student, vaccinated between ten and twenty years ago. Had scar 15 mm. in diameter very well pitted, the type of scar from which we obtain the highest percentage of immunity reactions. Vaccinated Nov. 19, 1913, in two spots with a control scarification, *the same virus being used which had failed twice with Cases 1 and 2.*
November 20: Areolae 10 mm. in diameter with slight papule around both vaccinated spots.
November 21: Same condition.
November 25: Areolae almost faded.

This case shows that virus incapable of growth may produce the reaction of immunity in a person well supplied with antibodies. It is suggested that repeated inoculation with a virus inactivated by heating, or sensitized by serum from an animal immune to vaccinia, might stimulate antibody formation without the necessity of first growing the colony of vaccine organism on the skin as a culture-medium.

If by the fifth day no reaction whatever occurs in a previously unvaccinated person, the virus is probably inert. Signs of activity produced by vaccinating a previously vaccinated person with the same virus should not be considered proof to the contrary. In the absence of natural immunity, one of the three reactions must occur.

CONCLUSIONS

1. Any one of the typical reactions against vaccine virus must be regarded as an evidence of immunity.
2. If antibodies against virus are present in the blood of the individual the immediate reaction occurs, characterized by the formation of an areola around the vaccinated spot usually within the twenty-four hours succeeding the vaccination.
3. If antibodies are not present but the power of forming them exists through previous vaccinations, the growing vesicle is aborted sooner than in a previously unvaccinated person, which accounts for the small size of the vesicle and the early appearance of an areola larger than in the case of a vesicle of the same age.
4. The technic described is an aid to exact observation subsequent to revaccination.
5. Physicians' certificates of immunity should be based on an observed reaction and not on the failure of two or three vaccinations, unobserved until the fifth day after the insertion. These "failures" may not have been due to immunity but to inert virus.

A NEW AID FOR THE DIAGNOSIS OF STRICTURE OF THE ESOPHAGUS

ARMISTEAD C. CRUMP, M.D.
Assistant Physician, Outpatient Department, Presbyterian Hospital, in Charge of the Stomach Class
NEW YORK

Having had negative Roentgen findings in several patients in my clinic with evident stricture of the

Fig. 1.—Epithelioma of esophagus; roentgenogram after wheat breakfast-food-bismuth subcarbonate mixture.

esophagus, as demonstrated by sounding, and knowing the importance of an early diagnosis in such con-

ditions, I shall report a method that will not only give a clear outline of the encroachment in malignant strictures, but also be a readily applied aid in the treatment of benign strictures. In the cases which I here report, the method as outlined by Bassler of blocking the cardia with a rubber bag was impossible because the rubber necessary for proper inflation was

Fig. 2.—Same case as Figure 1 after skin method; smallness of caliber above stricture due to infiltration and contraction of esophageal wall.

too thick to be passed through the strictures in spite of repeated attempts. The wheat breakfast-food-bismuth subcarbonate mixture also gave negative results (Fig. 1). The rubber-bag method is a good one, but causes pain. The bismuth mixture as suggested by Steward will outline the proximal part of the esophagus, but give little idea of the distal.

The method which I wish to report consists in the use of sausage-skin or gold-beaters' skin. Gold-beaters' skin is preferable, as it is tougher, but it cannot at present be obtained in satisfactory lengths. (I am having these made for treatment of benign strictures to be used as a guide instead of silk thread. Report of this technic will be given in a later paper.)

Sausage-skin is the fibrous coat of the intestine of the hog and is obtained from the slaughter-house in the cleaned and prepared state as used for packing sausage. It is cut in lengths of about 50 mm., thoroughly washed inside and out and placed in jars of a solution of 1 per cent. liquor formaldehydi and 10 per cent. glycerin. One end, the distal, of a piece of skin is tied with silk floss so as to make a bag. The proximal or mouth end is slipped over a rubber ferrule large enough for the skin to fit snugly and tied.

The bag as it is now is only a string. Before giving this to the patient it is best to cocainize the pharynx and esophagus to prevent retching and coughing. This, however, is not always necessary. The patient then swallows the skin with the aid of a little water. When the stricture admits a No. 15 French olive it is best to keep the skin straight by running it over a capillary rubber tube. This is easily done by first tying the upper end on the ferrule, holding the ferrule under a water-tap and allowing the water to carry the tube through. There should be a small metal tip on the end of the tube so that the skin can be tied without collapsing the rubber. The stomach contents can then be aspirated to show if the tube has passed into the stomach. It is surprising how easily a patient with the smallest stricture can swallow one of these skins and how readily it untwists itself on being filled.

After the skin is down, a thick bismuth mixture is allowed to flow in from an irrigator holding a couple of hundred cubic centimeters, 20 c.c. at a time. After the operator is sure that the bismuth is down, the skin is pulled up a little and allowed to drop back in order that any kinks that might possibly form may be untwisted. This method of filling and pulling until the bag is full to the pharynx is continued, a stopper is put into the ferrule and the patient given a couple of tablespoonfuls of bismuth mixture to swallow outside the tube, a teaspoonful at a time, to fill any irregularities or pockets not outlined by the bag.

There may be some difficulty in removing the bag in the smaller strictures, but this need not occasion alarm.

Fig. 3.—Annular stricture of the esophagus

The patient is placed face downward over the edge of the table and gentle but firm traction given the skin, the ferrule being held over some small vessel. The main thing is not to be in a hurry. Naturally, with a small stricture it will take a few minutes for the thick bismuth to pass the opening. The patient should be cautioned beforehand, so that it will not cause unnecessary alarm.

The advantages of this method are that the skins are easily obtained; the extent of involvement below as well as above is ascertained, and there is assurance of a good outline in an early as well as a late stage of the process.

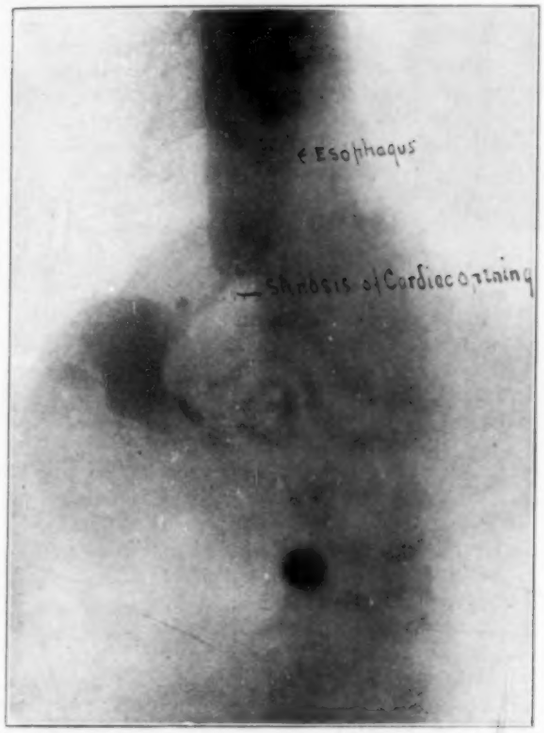

Fig. 4.—Carcinoma of the stomach. Entire stomach contracted. Skin in duodenum (proved at operation by Dr. Ellsworth Eliot).

My thanks are due Dr. Henry C. Thacher for suggestions in this work and also to Mr. I. L. Simms, roentgenographer of the Presbyterian Hospital, for his excellent pictures and his patience in helping me during the experimental stage.

20 West Fiftieth Street.

Acute Lymphatic Leukemia After Tetanus Serum Anaphylaxis.—Boy, aged 14, seen in consultation with Dr. W. P. Davidson of Sullivan, Ill., of previous good health, four weeks before had been given a prophylactic dose of antitetanic serum for a slightly infected nail puncture of foot; over two years ago he had taken a similar dose of antitetanic serum for a similar nail puncture of the foot. Within thirty-six hours after the second dose, he developed a violent urticaria with large wheals and erythema, with vomiting and fever; after a few days with decline of anaphylaxis a general adenitis of the cervical, axillary and inguinal glands was noticed, and the spleen and liver enlarged rapidly, the spleen, after two weeks, reaching the umbilicus; anemia became profound, fever of moderate grade ensued with great prostration, and death from hemiplegia occurred at the end of four weeks. The blood examination, one week before death, showed hemoglobin 35 per cent. and white cells 420,000, consisting of large lymphocytes 77 per cent., small lymphocytes 18 per cent., polynuclears 3 per cent., and eosinophilic polynuclears 2 per cent. Among the red cells there were numerous megaloblasts and poikilocytosis. A necropsy was not obtained. I record this case only with the idea that it might help to solve some of the problems of the relation of anaphylaxis to other diseases, and I do not pretend to assert that because the acute leukemia followed the anaphylaxis in a possibly sensitized subject, it was produced by the second dose of tetanus serum.—EVERETT J. BROWN, M.D., Decatur, Ill.

A METHOD OF STAINING AND MOUNTING SMEARS

HUGH S. WILLSON, M.D., MINNEAPOLIS

Time, expense and simplicity are large factors in laboratory work, especially when the practitioner does the work himself.

In the preparation of smears of gastric extract and feces I have been using, for some months, a method which not only fulfils the foregoing requirements, but also can be adapted to the staining and mounting of smears from many other sources.

The idea was suggested to me by Smithies' agar preparation, the disadvantages of which are that agar is very slow to put into solution and must be kept in a refrigerator to preserve for any length of time.

I have substituted ordinary powdered gelatin, which goes into immediate solution in boiling water.

A few pinches of gelatin powder are added to a small quantity of boiling water in a test-tube. For immediate use 2 or 3 c.c. are poured into a smaller tube and about one-third the volume of stain is added, or a sufficient amount to give the density of stain desired.

After smears have been fixed on a cover-slip, 2 or 3 drops of the gelatin stain are placed on the smear surface and the cover-slip inverted on a glass slide.

The gelatin stain hardens sufficiently to work with an oil-immersion lens and does the staining at the same time, making a neat stained mounting of sufficient permanency for ordinary work.

The expense element is modified by the fact that the used slides can be easily washed in hot water.

900 Nicollet Avenue.

Special Article

TYPHOID IN THE LARGE CITIES OF THE UNITED STATES

About a year ago[1] THE JOURNAL published statistics showing the prevalence of typhoid fever since 1906 in those cities of the United States having over 100,000 population. The cities so considered number fifty-one and include nearly one-fourth of the population of the country. The fact that sanitary improvements have been inaugurated in some localities as the result of the interest which has been aroused by the facts published in THE JOURNAL is sufficient justification for summarizing the typhoid conditions for 1913 in the same cities:[2]

TABLE 1.—DEATH-RATES FROM TYPHOID IN CITIES OF GROUP 1 (OVER 500,000 POPULATION)

	Deaths from Typhoid per 100,000 Population 1913	1912	Average 1911-1913	Average 1906-1910
New York	7.0	9.8	9.3	13.8
Boston	8.4	8.1	8.6	16.0
Chicago	10.5	7.5	9.6	15.5
Cleveland	13.5	5.9	11.4	16.5
Philadelphia	15.7	12.5	14.1	42.1
St. Louis	16.9	10.4	14.2	16.1
Pittsburgh, Pa.	18.1	12.7	18.5	74.3
Baltimore	23.6	23.9	24.9	34.6

1. Typhoid in the Large Cities of the United States, special article, THE JOURNAL A. M. A., May 31, 1913, p. 1702.

2. The number of typhoid deaths has been sent to us by the local officer of health and the rates have been calculated on the basis of population estimates made according to the method of the U. S. Census Bureau. It may perhaps be noted that the figures kindly furnished us by the municipal officials include the deaths of non-residents as well as residents occurring in the city limits. In some instances this undoubtedly gives an exaggerated impression of the amount of typhoid fever in a community, but at present statisticians are agreed that "the attempt to eliminate the deaths of non-residents would often result in an understatement of the true mortality" (Bureau of the Census, Mortality Statistics, 1912, p. 13).

OUTBREAKS IN NEW YORK AND PHILADELPHIA

It is a matter for national congratulation that the largest city in the country has reached so satisfactory a condition in its typhoid death-rate (New York, Table 1), recording as it does in 1913 not only the lowest typhoid rate in its history (7 per one hundred thousand population), but also a rate that compares creditably with the typhoid rate in European capitals. It should be remarked also that this low rate in Greater New York was reached in spite of a milk-borne typhoid epidemic which involved several hundred cases in Manhattan during September and October. Even including this outbreak, the total number of cases between July 1 and November 1 was less in 1913 than in 1912.[3] Philadelphia, like New York, suffered in 1913 from an unusual and highly instructive outbreak. Beginning about the end of April and continuing for several months, there was, in Philadelphia, an excessive amount of typhoid in the district served by the Torresdale filters. From 70 to 75 per cent. of all the cases in the city originated in the infected district. This localization of the typhoid excess in the region supplied by a particular source fixed responsibility very clearly on the water-supply, and the epidemiologic conclusions were confirmed by bacterial examination. Since the water on leaving the filter-plant was pure, the conclusion was drawn that infection occurred through leakage into the pure-water mains. It was then learned that a large number of manufacturing plants in the affected district maintained a dual piping system for fire protection or some other purpose — one set of pipes carrying the filtered city-water, the other connected with the first and containing the raw and highly polluted water of the Delaware River. It is clear that in such a system any defect of the valves or any accident to the separating devices might result in a calamitous mixing. Over 140 of these dual connections were severed by order of the Board of Health and the number of typhoid cases in the affected district has since greatly decreased. In spite of this rather serious epidemic the typhoid death-rate increase was slight compared with the former alarming prevalence of typhoid in Philadelphia.

The case of Cleveland seems to call for special comment in view of the fact that this city exhibits the greatest change in its typhoid rate of any city in the group, the 1912 rate being more than doubled in 1913. The increase is so great that there is reasonable ground for the concern felt in that city over the situation. As is well known, the Cleveland water-supply, which is at present derived from Lake Erie without filtration, is, in its raw state, more or less contaminated, and although the water is treated with calcium hypochlorite, there seems some question whether the amount of disinfectant used during part of 1913 was adequate for the destruction of all pathogenic organisms. It is not surprising that plans are on foot for a filtration plant.

AN INCREASE IN CHICAGO

A somewhat disquieting typhoid increase occurred in the fall of 1913 in Chicago. The lake water was held responsible by some writers, and facts recently brought to light seem to support the view that the public water-supply is still a factor in the typhoid fever situation in Chicago.[4] Baltimore still leads this group of cities in excessive typhoid fever, but maintained substantially the same rate in 1913 as in 1912, in the face of a typhoid increase in all the other cities of the group, excepting New York.

TABLE 2.—DEATH-RATES FROM TYPHOID IN CITIES OF GROUP 2 (300,000 TO 500,000 POPULATION)

	Death from Typhoid per 100,000 Population 1913	1912	Average 1911-1913	Average 1906-1910
Cincinnati	6.4	7.5	8.5	30.0
Newark, N. J.	7.9	7.1	8.4	14.6
Milwaukee, Wis.	11.2	25.3	18.6	27.0
Minneapolis	12.4	11.5	11.8	32.2
Los Angeles, Cal.	13.5	14.6	13.6	19.0
Buffalo, N. Y.	15.3	11.4	17.3	22.8
Washington, D. C.	16.4	21.2	19.5	36.9
San Francisco	16.7	14.1	15.5	27.3
New Orleans	16.9	14.0	20.5	35.6
Detroit	27.5	17.1	20.1	23.4

Cincinnati has succeeded in bettering a little its excellent record for 1912. Washington recorded the lowest typhoid-rate in its history, less than half its average for the years from 1906 to 1910 (Table 2). Remarkable improvement in 1913 is exhibited by Milwaukee. There can be little doubt that the Milwaukee reduction is due primarily to the persistent use of hypochlorite in the water-supply. It shows what may reasonably be expected in this typhoid-ridden city when the water-supply is permanently and thoroughly protected from sewage contamination. The water-supply conditions in Milwaukee have already been fully described in THE JOURNAL.[5]

The great improvement in recent years in New Orleans is worthy of remark and is perhaps due to the extension of a modern sewerage system in that city. Is there a lesson here for other Southern cities?

Minneapolis, which ranked eighth in the list in the period from 1906 to 1910, ranked third in the period from 1911 to 1913. It is instructive to note that the rate for 1913 (new filtration plant in operation since January) differs little from that for 1911 and 1912, when the unfiltered water was treated with hypochlorite.

THE HIGH RATE IN DETROIT

Detroit stands out in Table 2 with a conspicuousness that can hardly be pleasing to its citizens. The Detroit typhoid-rate for 1913 was the highest in the group and nearly double that of the next highest on the list. Only four other cities in the whole fifty-one had a higher rate than Detroit, and three of these are in the Southern states. There has been little disposition in Detroit to admit that the drinking-water might be responsible for the relatively high typhoid prevalence, and we note still a tendency on the part of some of the Detroit newspapers "to rebuke and refute the alarmists." Even within a few months one paper warns its readers editorially not to "take the international report on the water-supply of the Great Lakes too seriously," and follows its reassurance with the jaunty remark: "From what the scientists say we folks here must have all died from typhoid fever long ago." We do not believe that the citizens of Detroit will relish having the highest typhoid-rate, barring one, of any Northern city, or that they will subscribe without further question to the declaration that "as a matter of fact, typhoid fever is not even one of our grave menaces in this city." Why should Detroit shut its eyes to the facts?

3. Report on the Typhoid-Fever Epidemic in Manhattan, 1913, by the Central Council of Public Health of the City of New York, New York Med. Jour., Jan. 10, 1914.
4. Young, G. B.: Am. Jour. Pub. Health, April, 1914.
5. Typhoid Fever in Milwaukee and the Water-Supply, special article, THE JOURNAL A. M. A., July 16, 1910, p. 211.

TABLE 3.—DEATH-RATES FROM TYPHOID IN CITIES OF GROUP 3 (200,000 TO 300,000 POPULATION)

	Death from Typhoid per 100,000 Population 1913	1912	Average 1911-1913	Average 1906-1910
Seattle, Wash	4.9	7.4	7.3	25.2
Portland, Ore.	7.8	16.9	14.2	23.3
St. Paul, Minn.	8.3	10.2	9.5	18.0
Providence, R. I.	10.0	10.3	10.8	14.3
Rochester, N. Y.	10.2	11.8	10.8	12.4
Jersey City, N. J.	10.5	7.5	8.1	12.6
Denver	12.7	13.0	14.4	35.5
Kansas City, Mo.	21.6	12.8	19.4	35.6
Louisville, Ky.	21.7	18.9	21.6	52.6
Indianapolis	24.5	18.3	23.0	30.4

The figures for this group are certainly encouraging reading. Six out of the ten cities report a lower typhoid-rate in 1913 than in 1912, and all ten had a lower average for the three years, from 1911 to 1913, than for the years from 1906 to 1910, the reduction amounting in three cases (Seattle, Denver and Louisville) to more than one-half (Table 3). Seattle reported for 1913 the lowest typhoid death-rate of any of the fifty-one cities. The Kansas City rate for 1913, on the other hand, is so much higher than that for 1912 as to suggest inquiry.

TABLE 4.—DEATH-RATES FROM TYPHOID IN CITIES OF GROUP 4 (125,000 TO 200,000 POPULATION)

	Death from Typhoid per 100,000 Population 1913	1912	Average 1911-1913	Average 1906-1910
Scranton, Pa.	6.4	8.7	9.0	31.4
Paterson, N. J.	6.8	4.6	10.9	19.3
Oakland, Cal.	9.1	9.0	10.2	21.5
New Haven Conn.	11.3	24.5	19.4	30.8
Worcester, Mass.	12.3	6.6	8.5	11.8
Syracuse, N. Y.	13.0	16.8	15.2	15.7
Atlanta, Ga.	16.6	35.2	35.9	58.5
Richmond, Va.	19.2	16.2	17.6	34.0
Columbus, Ohio	19.2	20.2	17.7	40.0
Memphis, Tenn.	30.1	56.2	49.2	35.3
Birmingham, Ala.	36.0	38.0	....	....
Toledo, Ohio	41.8	33.0	32.5	37.4

Group 4 (Table 4), like Group 3, shows a lower death-rate in most cases for 1913 than for 1912. New Haven, in contrast to its previous bad record, reports the lowest death-rate in its history, less than half that of the preceding year. Its rate is still, however, twice that of the neighboring city of Bridgeport. Worcester, after maintaining a reasonably low record for a series of years, fell from grace in 1913 and recorded a higher typhoid-rate than the average for the preceding seven years. Atlanta and Memphis report a noteworthy decrease, Toledo an increase. Only one city (Memphis) has a higher average for the period from 1911 to 1913 than for 1906-1910. Two cities maintain about the same level (Syracuse and Toledo); all the others show a substantial reduction, especially marked in the cases of Scranton, Richmond and Columbus. Toledo continues to have a high rate for a Northern city.

TABLE 5.—DEATH-RATES FROM TYPHOID IN CITIES OF GROUP 5 (100,000 TO 125,000 POPULATION)

	Death from Typhoid per 100,000 Population 1913	1912	Average 1911-1913	Average 1906-1910
Bridgeport, Conn.	5.4	7.4	5.5	10.2
Omaha	6.9	13.2	21.7	40.8
Spokane, Wash.	7.2	16.9	20.9	50.4
Cambridge, Mass.	9.2	2.8	5.6	9.8
Lowell, Mass.	10.0	9.2	8.6	13.9
Fall River, Mass.	10.5	18.8	15.0	12.5
Hartford, Conn.	11.5	12.7	14.7	18.9
Dayton, Ohio	15.1	17.9	17.1	22.4
Grand Rapids, Mich.	16.7	34.0	25.6	29.7
Albany, N. Y.	27.4	17.7	21.0	17.5
Nashville, Tenn.	36.1	30.1	39.4	61.2

Grand Rapids shows the greatest change in any city in Group 5 (Table 5), the typhoid rate being cut in two in this the first year of operation of the new water filter. Fall River also shows marked improvement. Albany suffered in April, 1913, from the flooding of the slow sand-filtration plant with the polluted Hudson River water. From April 1 to May 1, 180 cases of typhoid were reported. Five deaths from typhoid were reported in April and seven in May or nearly one-half the year's record (28). But for this outbreak the Albany death-rate would have been apparently very close to that of 1912.

Nashville, Tenn., had a somewhat higher rate in 1913 than in 1912. Is there any real reason why Nashville should have a typhoid rate more than twice as high as New Orleans?

Only three cities had a higher average typhoid rate from 1911 to 1913 than from 1906 to 1910 (Memphis, Tenn., Fall River, Mass., and Albany, N. Y.).

Cities with an average typhoid death-rate in the years from 1911 to 1913 below 10 are New York, Boston, Chicago, Cincinnati, Newark, Seattle, St. Paul, Jersey City, Scranton, Worcester, Bridgeport, Cambridge and Lowell — thirteen cities as contrasted with one (Cambridge) having an average below 10 from 1906 to 1910.

NINETEEN THIRTEEN NOT A TYPHOID YEAR

The year 1913 has been widely spoken of as a "typhoid year," and it is known that several cities suffered more severely from typhoid in 1913 than for the two or three years preceding. But in the whole population group involved there does not appear to have been an increased typhoid prevalence.

TABLE 6.—TOTAL AVERAGE TYPHOID DEATH-RATE FOR 1912 AND 1913

	Total Population (51 Cities) (Estimated by U. S. Census-Bureau Methods)	Typhoid Deaths	Typhoid Death-Rate per 100,000
1912	21,472,847	2,731	12.72
1913	21,814,002	2,775	12.70

In 1913, 26 cities had a lower typhoid death-rate than in 1912, and 25 a higher; 14 had a death-rate under 10 in 1913 and 15 in 1912. While not a "typhoid year" in the sense of an actually increased typhoid rate, it is evident that 1913 was not marked by any considerable typhoid reduction.

Comfort Stations.—Most American cities are insufficiently, or not at all, provided with public comfort stations, a shortcoming in striking contrast with towns and cities abroad. The New York Association for Improving the Condition of the Poor has made a survey of the public and semipublic comfort stations in New York City, with a view of obtaining an idea of the extent of their use, their character, accessibility, equipment, sanitary condition, etc. The results of this survey are published in a pamphlet of the Bureau of Public Health and Hygiene of that association. Room for greater improvement has been found. More stations, with better accommodations and equipments are needed, for which many recommendations and specifications have been suggested. One of the recommendations is that the present subway stations should be more generally utilized for this purpose, and that in the extensions of the subway, provisions should be made for these public comfort stations. An interesting feature of the survey was the bacteriologic study of contacts within the stations in which the possibility of the transmission of disease was shown to be present. Parasites are also acquired in this way. It is said that no devices, however, elaborate or sanitary, are likely to be a success in public institutions unless their installation is accompanied by an active and direct educational campaign.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street . . . Chicago, Ill.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

Contributors, subscribers and readers will find important information on the second advertising page following the reading-matter.

SATURDAY, MAY 9, 1914

THE SENSATIONS OF THE SKIN

Aside from its purely scientific interest the study of the cutaneous sensations has a direct bearing on the every-day experiences of practical medicine. Not long ago the essential function of the sensory nerves of the skin was conceived of as relating almost solely to the sensation of touch. Little by little our knowledge has been extended and it has been shown that these nerves mediate a number of qualities of sensation, such as pressure, warmth, pain, heat and cold. It is established to-day that the cutaneous senses are not distributed uniformly over the whole skin, but are associated with discrete points or spots. The warm and cold spots, for example, have a distinctly punctiform distribution. Not a little effort has been expended by physiologists in mapping this out; in measuring the delicacy of some of these senses in various regions of the skin; in determining the threshold stimulus and the localizing power, as well as numerous other factors which lie on the border between physiology and psychology. Cutaneous pains are not always referred to the actual point of irritation by all persons. The inaccuracies here involved not infrequently bring confusion to the physician. Reflected pains misreferred to the surface of the body, when in reality they involve visceral organs, may become an occasional cause of diagnostic error.

To the great mass of positive contributions on the sensory capacity of the normal skin, gained from an enumeration and analytic measurement of the various sensations and showing that function therein is distributed in, and limited to, minute and sharply localized spots, a newer group of negative or pathologic data has been added. This has involved the attempt to ascertain accurately the various forms of sensory loss shown by skin deprived of its nerve-supply. Anomalous changes in the anatomic distribution of the nerves or the perversions brought about by disease or injury have been subjected to critical examination in a considerable number of persons. The latter method, while affording a most valuable sort of corroboratory evidence in connection with the careful observations of trained physiologists, suffers somewhat from the fact that the subjects of accidental division of or injury to the cutaneous or other nerves rarely possess the intelligence or training requisite for an advantageous and reliable interpretation of such subtle phenomena as sensations. It was, therefore, a great step in advance when Henry Head conceived the possibility of obtaining for investigation on the negative side a subject who could be selected for his known capacity as an observer rather than from the mere fact that he had experienced the loss of the function of a nerve.

The pioneer work of Head,[1] in which his own nerves were sectioned and he thus obviated the difficulty of obtaining from clinical subjects, untrained in introspection, reliable accounts of the changes in cutaneous sensibility occurring during the regeneration of a cutaneous nerve, speedily led to the discovery of a number of phenomena that had previously escaped observation. It has emphasized the necessity of differentiating deep sensibility from cutaneous sensibility proper. After desensitization of any given surface area of the skin it is still possible in this area to appreciate deep pressure and pain, and the localization of the situation of the pressure is fairly well carried out. On the other hand, the sensations of light touch, as well as of temperature and pain evoked by a light pinprick, are absent. The sensations of pressure, as well as of deep pain or pressure pain, are therefore carried by the nerves of deep sensibility. They are not the cutaneous nerves, but are derived from the sensory elements of the muscular nerves. To the fingers, for example, they run in the tendons of the muscle. Therefore simultaneous division, as by a circular-saw cut, of the cutaneous nerves and tendons to the fingers will abolish deep as well as superficial sensibility.

These interesting beginnings, the wider generalization of which cannot be rehearsed here, were followed by similar, more extensive divisions of seven of their own cutaneous nerves by Trotter and Davies.[2] In each case the area of skin supplied by the nerve showed in consequence of the operation defects in seven distinct functions: four sensory, namely, sensibility to touch, cold, heat, pain; and three motor, namely, vasomotor, pilomotor and sudomotor. Their observations also agree in establishing that sensibility to touch is subserved by a nervous mechanism distinct from that of pressure; the former occurs in the skin only, the latter chiefly in the deep structures. It is probable, however, that the skin possesses some sensibility to pressure. After section of a nerve, recovery of function occurs only as a result of regeneration. Recovery of all the functions which are dependent on regeneration begins about the same time.

With the increase in the number of reliable subjects comes a gradual elimination of the personal equation

1. Head, H.: Brain, 1905, xxviii, 99; 1908, xxxi, 323.
2. Trotter, W., and Davies, H. M.: Experimental Studies in the Innervation of the Skin, Jour. Physiol., 1909, xxxviii, 134.

from observations in this field. This fact offers a justification for such experiments involving self-sacrifice, the latest of them being carried out by Dr. Boring[3] of the Physiological Laboratory at Cornell University, who sectioned the anterior branch of an internal cutaneous nerve. The novelty in his experiments consisted in the fact that a special attempt was made, during the year preceding the operation, to train the subject in the observation of cutaneous sensation and in the analysis of the sensational complexes mediated by the normal skin. Care was taken to distinguish between the qualities of cutaneous contact, cutaneous pressure and deep pressure, all of which can be distinguished by practice; between warmth, heat and burning heat (the last two are complex); and to some extent between the different modes of cutaneous pain. Besides this special training, the subject had the advantage of general introspective practice, obtained during several years of psychologic investigation The selection of the nerve for section was such that the region affected was sufficiently small to permit of a more careful exploration than would have been possible if it had been necessary to cover a large area. As in the earlier investigations, the section of the cutaneous nerve did not destroy the sensibility of the subcutaneous tissue, which provided to a considerable extent the capacity for localization. With the exception of certain early general pains, that were probably, strictly speaking, not of cutaneous origin, it may be said that the return of the sensations of warmth, cold, pressure and pain began at approximately the same time. The regions insensitive to each of these four sensations, both immediately after the section of the nerve and during the period of returning sensibility, were approximately, but by no means exactly, the same. In general, sensitivity began to return at the outside of the affected area and progressed toward the center, although decided irregularities in this course appeared; hypesthesia preceded normal sensitivity, but periods of hyperesthesia to pain and cold were noted. The observations so far recorded indicate that the four sense qualities will not simultaneously return to normal and that temperature sensations return more rapidly.

Only those who have engaged in laborious, fatiguing (and even painful) investigations in this field can appreciate the value of such contributions. We are told by one worker that he made and recorded in detail a series of 50,000 separate touches only to discover that the solution he had sought was not to be obtained by that method. It is well for those who sooner or later will meet the problems of skin sensations in some practical aspect, to realize the personal cost at which the modern advances in our knowledge have been achieved.

3. Boring, E. G.: Method in the Investigation of Sensibility after the Section of a Cutaneous Nerve (Preliminary Communication), Proc. Soc. Exper. Biol. and Med., 1914, xi, 69.

THE ACTION OF VITAL STAINS BELONGING TO THE BENZIDIN GROUP

The most striking feature of vital stains is the peculiar selective affinity which they possess for certain cells, and the wide difference and often extreme contrast in the affinity of very closely related dyes. Two views are held concerning the nature of vital staining: The first, advocated by Ehrlich, regards the chemical properties and is based on the assumption of receptors for certain parts of the molecule of the dye. The second, chiefly supported by Overton, takes the physical properties of dyes into account. The tendency at present is to consider the latter as the more probable explanation.

Evans and Schulemann[1] in a recent article report experiments with dyes of the benzidin group, made for the purpose of determining the factors which govern the elective action of these dyes. They found that it is not the position of the hydroxyl group, not the entire periamido complex or the presence of two sulphonic groups which produces the different effects of dyes; in short, that chemical reactions do not determine the results, which rather depend on the physical properties of the stains. They behave in the manner of colloids, and according to the size of the particles in suspension exhibit a difference in the rate of diffusion; positive dyes have a rapid rate, negative dyes little or no diffusion. The most positive dyes of the benzidin group are the disulphonic acids, the sulphonic acid evidently making the dye more soluble and hence more diffusible; for sulphonation of a number of otherwise negative dyes resulted in the production of brilliant positive dyes. The pigmentation of the mucous membranes, observed in workers with silver, rests on the same principle, and is a good illustration that colloidal suspensions of gold, silver and other metals furnish vital stains.

In vital staining the power of diffusion enables the molecules of the dye to reach those cells for which they have an affinity. Singularly enough the polymorphonuclear cells of the blood, the chief cells in phagocytosis, are not vitally stained; the epithelial cells, except those in the proximal convoluted tubules of the kidney, are also refractory, and the cells of the entire nervous system, with the exception of the hypophysis and the choroid plexus, remain unstained. The cells for which the vital stains have an affinity are almost exclusively of the connective-tissue type: the large cells described by Maximow, Ranvier and others; smaller cells, generally known as fibroblasts; the macrophages; cells in the peritoneal lining; the endothelial cells (the Kupffer cells) in the liver, and the interstitial cells of Leydig in the testicles.

The fact that some cells stain deeply, while blood-cells do not take the stain, was made use of by Evans,

1. Evans and Schulemann: Science, 1914, xxxix, 443.

Bowman and Winternitz[2] to ascertain the part which the Kupffer cells play in the formation of the miliary tubercle in the liver. They found that under the stimulation of the dye alone these cells enlarge, increase in number and finally form giant-cells. But while the reaction in tuberculosis sets in rapidly, Kupffer cells, vitally stained, begin to react only after the third or fourth dose of successive daily injections of dyes, and the final changes occur only after the lapse of many days. The early changes, therefore, which occur in rabbits, vitally stained with trypan-blue and inoculated with bovine tuberculosis by way of the portal circulation, are almost exclusively referable to the tubercle bacillus, the dye serving as an aid in the recognition of the type of cells involved in tubercle formation. As early as half an hour after the inoculation, there occurs an accumulation of polynuclear leukocytes which are unstained. Very soon they are replaced by mononuclear endothelial cells, as revealed by the vital stain, which take active part in the reaction. They grow rapidly as a result of the infection and at the end of thirty-six hours the giant-cell is produced, which, even when fully formed, is still joined to the endothelium of the vessel by protoplasmic strands. The epithelial cells which surround the giant-cell are likewise derived from the endothelial cells, both being easily differentiated from the third type of cell, a mononuclear cell, which the absence of stain denotes as a derivative of the blood. A secondary migration of polynuclear leukocytes takes place when the tubercle degenerates.

These results overthrow the notions held by older writers and not yet entirely abandoned, that wandering cells play the chief part in the formation of the tubercle. In the liver, at least, the giant-cell and the epitheliod cells are shown by vital staining to be derived exclusively from hepatic endothelium. It is probable that other results of interest may be anticipated from the further studies of these dyes whose selective action may show the way for the proper interpretation of a variety of changes.

2. Evans, Herbert M., Bowman, Fred. B., and Winternitz, M. C.: An Experimental Study of the Histogenesis of the Miliary Tubercle in Vitally Stained Rabbits, Jour. Exper. Med., 1914, xix, 283.

THE SULPHUR-YIELDING COMPONENTS OF THE BRAIN

The idea that certain mental diseases are associated with a disturbed metabolism of the central nervous system is not a new one. The reason for the absence of comprehensive data from which it might be possible to formulate some tenable hypothesis is not difficult to ascertain. Like other tissues and organs of the body the nervous system doubtless manifests the result of its physiologic activities by the production of certain products of waste and by undergoing certain alterations in composition which must speedily be repaired, if the parts are to continue to function normally. The total mass of the nervous tissues is so small in comparison with that of the metabolic rivals of these tissues, the muscles and glands, that there is little hope at present of detecting the specific contribution of the nervous elements to the total waste of the organism unless it differ from the usual excretory products in quality rather than quantity. If the brain, for example, produced some peculiar chemical katabolite as the result of its activities, it might be possible to detect and measure this specifically in the urine or some other representative of body-waste. But the addition of a little more or less carbon dioxid or urea or creatinin to the contribution furnished by the preponderating bulk of other tissues could scarcely be charged to its real source. Hence it is that the attempts to identify quantitative urinary changes with nervous activity have been almost uniformly futile.

Greater hope of success was awakened when the lamented young American physiologic chemist, Waldemar Koch, began to attack the problem of the metabolism of nervous matter by another method — that of comparative analysis of the tissues in different states of health and disease. After having devoted some time to the nature and distribution of the sulphur derivatives in the nervous system, he turned his attention to the composition of the brain in respect to these components in well-defined manifestations of nervous and mental disorders. In a number of cases of dementia praecox Koch found an unmistakable decrease in the non-protein "neutral sulphur" fraction in definite parts of the brain. He concluded that in this condition there occurs a disturbed oxidative function which is responsible for the appearance of the chemical phenomena.[1]

From a somewhat different point of view Woskressenski[2] has lately studied the possible correlation of pathologic manifestations of the nervous system with an altered composition of the brain substance. There have been reports to the effect that in certain psychoses the "neutral sulphur" of the urine is increased. If this were true, one might expect to find the sulphur content of the brain altered correspondingly; but careful analyses of brains from cases of dementia, epilepsy and youthful psychoses indicate no alteration of the sulphur content as compared with that of mentally normal persons. Whatever may ultimately prove to be the outcome of further investigation of organic diseases of the brain, the existence of disturbed sulphur metabolism in the case of the purely functional disorders is yet to be demonstrated. Indeed, it is unlikely on the basis of the current evidence.

1. Koch, W.: Zur Kenntnis der Schwefelverbindungen des Nervensystems, Ztschr. f. physiol. Chem., 1907, liii, 496.
2. Woskressenski, S.: Ueber den Schwefelgehalt der Grosshirnrinde von normalen und geisteskranken Menschen, Ztschr. f. physiol. Chem., 1914, lxxxix, 228.

HOUSING AND SANITATION

Without doubt, it is a difficult and complicated matter to obtain precise numerical data concerning the influence of housing on health. So many factors come into play in the assembling of vital statistics that a comparison of different localities may give very confusing or even misleading results. Rarely if ever is it possible to separate a city population into groups in which the character of the housing is the only factor affecting morbidity or mortality. A recent editorial in the *American Journal of Public Health*[1] calls attention to the importance of race in influencing the rate of mortality in various city districts, and proclaims the need of caution "in arguing the effect of crowded houses." This is perhaps well enough. The writer of the editorial goes so much further than this, however, that it seems worth while to note the methods by which he reaches his conclusions. Throughout the editorial in question the mistake is apparently made of assuming that because the effect of bad housing is not directly demonstrable by the statistics at hand, therefore it does not exist. "Not only in Boston, but in Glasgow and other important cities of the world has attention already been diverted from crowded houses to other causes, and it is evident that the question of race-component may be a more important one than the questing of housing."

This attitude seems to be based on a fundamental misconception. It does not follow that because the factor of racial susceptibility may be so powerful in some instances as to obscure completely the factor of bad housing, the latter is not operative at all. This mode of argument is like attributing all the typhoid fever in a city with a bad water-supply to the drinking-water, and ignoring the existence of the cases caused by carriers, because the number of such cases cannot be accurately determined or even approximately estimated. This obvious statistical fallacy would be hardly worth commenting on were it not for the extraordinary conclusion of the editorial in question. "For decency's sake, for morality and for ethical reasons, the demand for better housing should never cease, but sanitarians must begin to divert their attention to racial and other factors of population."

This declaration seems to mean that housing is practically negligible as a public-health factor, however important it may be "for morality and for ethical reasons." We do not believe that this position is tenable. The well-known facts concerning the spread by contact of some of the commonest infectious diseases suggest one way at least in which crowding may possess a very definite sanitary significance. It may be added, too, that while the evidence that "tuberculosis houses" or "cancer houses" are agencies in keeping alive specific disease needs careful analysis, it cannot be dismissed as altogether worthless. Especially convincing, however, are the studies which trace a connection between housing conditions and infant mortality. From the early observations of Meinert in Dresden in 1886, down to the recent work of Liefmann and Lindemann, all careful students are of one opinion. In hot weather the babies die in those dwellings which from their situation or construction favor air-stagnation and long-continued high temperature. Narrow streets, small courtyards, insufficient window and door space; in short, crowding of dwellings and crowding within dwellings, are invariably associated with high infant mortality. On the other hand, houses freely exposed to currents of air and rooms into which cooling breezes can enter have a relatively low summer infant death-rate. Few can read the investigations of Meinert, Ballard, Willim, Prausnitz, Liefmann and Kathe without being persuaded that housing exerts a real and important influence on infant mortality. So far from its being desirable for sanitarians to "divert their attention" to other factors, we are of opinion that in many directions the effect of housing on health will repay a more careful study than it has yet received. We regret that the *American Journal of Public Health* should editorially minimize, even to the slightest degree, the importance of the sanitary aspects of housing.

1. February, 1914, p. 130.

AN ANCIENT DIETARY RECOMMENDATION FOR NEPHRITICS

Mr. D'Arcy Power in his paper on "The Lesser Writings of John Arderne," which was read in the section on the History of Medicine at the International Medical Congress in London last August and has lately appeared in the published transactions, quotes what John Arderne, a distinguished old English surgeon, says with regard to the dietetic management of nephritics, or as he called it in his old-fashioned English, the "governaunce of nefretykes."

John Arderne (the later form of the name is Arden) is the first important figure in English medicine and the earliest English surgeon about whom we have any detailed knowledge. He was born early in the fourteenth century, visited many lands, had extensive experience in military surgery during the Hundred Years' War with France, was in some way attached to the suite of John of Gaunt, and left a series of medical and surgical writings in which he shows his knowledge of medical literature. Above all he draws from his own experience helpful directions for other practitioners. His writings contain many absurdities, but some suggestions that show how sensible he was and how carefully observant he had been.

Patients with renal disease, he says, "should put away anger and all strenuous business and intense occupation and all manner of things that disturb the soul or move it in any way save only joy. They should

forbear all manner of meats that are heavy of substance and viscous, as old beef that is powdered and hardened with salt, and also fresh pork. They may use good wine and the flesh of calves, especially suckling calves, and also the meat of all fowls save those that are of the lakes and ponds. They may eat of all the scaly fishes, that is, the fish of the rivers and of running waters that are active, but not the heavy fish of standing waters, and they should eschew all manner of foods that are made of pastry and all bread that is baked of dough and all fatness." They should lead an easy life with a full amount of sleep, so that if they pass a bad night they "mowe sleepe be the morne unto IX on the clokke." In the days when men rose at five or, at the latest, six o'clock, nine was of course a very late hour, equivalent now at least to eleven or twelve.

It is curiously interesting to trace in the history of medicine the tradition of the dietetic difference between red and white meats. This oldest English medical document, written in the period of transition from the older to the modern form of the language, contains an explicit statement of the present-day theory that a marked difference exists between the red and white meats in food value and in irritative properties. The most careful methods of modern chemical investigation have failed to substantiate this theory, but it continues to be a favorite dietetic and therapeutic scapegoat in many of the chronic diseases. In gouty conditions, in so-called chronic rheumatism and above all in nephritis, patients are warned not to eat the red meats. They are told that these contain extractives particularly irritant to all chronically inflamed tissues, especially to inflamed joint-structures and the kidneys. Distinguished chemists have said that since both white and red meat are composed of muscle-tissue and the nitrogenous content of one almost equals that of the other, the only reason for the continuance of the idea of a difference between the two lies in this old clinical tradition.

Arderne seems to have had some idea of organotherapy for he suggests that nephritic patients should "use the reynes [that is, the kidneys] of beasts either roasted or boiled."[1] He recommends particularly that these patients should eat the flesh of a fowl known in the scientific terminology of his time as the *Cauda tremula* or Wagstertte, that is, the familiar wagtail of the modern time. This should be eaten "either fresh or salt or baked without dryness for and it be drye it is nought woorth." He adds further, "And note that the use of the powdir or of the flessch of the Wagstertte availeth gretely to breke the stone in the bladdere." The passage that we have quoted illustrates how much Arderne knew about caring for a nephritic patient. Probably because of his military experience he was particularly expert in genito-urinary surgery, and anticipates many of the modern prescriptions and directions for treatment. Many things have been recommended and all varieties of drugs have been prescribed for a similar purpose since Arderne's time, and not one of them has been any more successful than the dietary suggestions which he offers with so much assurance.

1. The original English of the first translation of Arderne, made in the fifteenth century, seems interesting enough to reproduce. It runs as follows: "Nefretykes must putte awey ire, hyghly & moche besynesse & almanere thynge that longeth to the soule saff only joye. . . . They schulle forbere almanere metys that ben to grete of substaunse & viscious, as olde beeff that is myghtyly pooudryd & enharded with salt & also fressch porke but yf it lye in salt iiii dayes afore . . . They mowe use grete wyne & the fflessch of calvys that ben soowkynge & also of all ffowlys saff thoo that ben of the lakys & dichys . . . and squamous flyssches, i. e. fyssch of the rivere, of the stony waterys & rennynge ryveres & not of the standynge waterys & they schulle eschywe almaner mete made of paast [pasties] & all bred that is dowgh bakene & all fatnesse. And they schulle use the reynes of the beeste other roste or sode. And in especiall he schall use a ffoowl that is called *Cauda tremula* or Wagstertte other fressch or salte or bakene without drynesse ffor & it be drye it is nought woorth.

Current Comment

AGAIN THE WHITE MAN IN THE TROPICS

At a meeting of the Society of Tropical Medicine and Hygiene in London in October, Sir Havelock Charles, in a discussion of neurasthenia among northern peoples who go to India, made some interesting observations on the failure of such peoples to survive without admixture with the native races or without conforming to the necessities imposed by the climate. "Conforming to the climate," he says, "will probably mean the preservation of a percentage of strains defective in the primitive qualities, and with a liability to nervous weakness." The light-colored peoples are perfectly fitted to cold climates, but when they migrate to hot latitudes they are damaged by the conditions to which they are exposed. It is said that fresh waves of immigration are constantly necessary for the preservation of the purity and predominance of the white race in a tropical climate. Unless these occur, whether the invaders are white or yellow, in the crossing of light and dark races the foreigners have invariably assumed the characteristics of the natives. The climate seems to limit, to define and mold the foreign characteristics in accord with the alterations brought about by the food and the soil. As instances of this are cited the disappearance of the Turanian invaders of India, the failure of any foreign race to establish itself in Egypt, Mexico or Peru. The Chinese in Calcutta and Singapore only maintain their original qualities by importing continuous streams of fresh blood. It is true, Sir Havelock says, referring more or less particularly to the experiment at Panama, that with money and power enough insanitary conditions may be rectified and tropical diseases may be banished, but the heat, the sunlight and the climatic conditions cannot be changed either by the power of money or the power of knowledge. People evolved in the environment of northern latitudes cannot retain their characteristics in a tropical or subtropical climate any more than southern wheat can be made to grow and give its increase in a highland soil. Men of sound constitution can and do live in the tropics, but women and

children fare far less well, and the results in the third and fourth generations would be deplorable. Sir Havelock says that the white man is not plastic enough to take up the conditions of the colored man and yet remain white, and without intermarriage his descendants will die out. "His incapacity is based on biologic factors—skin and bone, his blood, his brain and cranial capacity, his nutritive processes. Prolonged residence in a high temperature, with little range, and high relative humidity, with excess of light, will produce both physical and mental deterioration, quite apart from the influence of any parasitic disease." Sir Havelock does not believe the experiment at Panama, with unlimited money and unlimited power, proves anything with reference to the possibilities in India. There, he says, even in the most advanced coast-towns Panama methods could not be applied, while in the interior it would be both economically and politically impossible. Such observations are especially interesting and pertinent in view of what has been said with regard to the possibility of the more extended occupation of our tropical possessions by the people of the United States.

A NEW JOURNAL FOR A NEW SCIENCE

No one can study the modern literature of scientific medicine and its related branches without observing the increasing influence of the newer physical chemistry. The phenomena of the recent science termed immunology are at present portrayed in a language foreign to the physician of a decade or two ago. Hemolysis, agglutination, cytolysis are discussed in new terms of permeability, adsorption, surface tension, etc. The story of the colloids has become prominent and has furnished new interpretations for various features of precipitation, gelation and solution. Enzymes and catalysis, antigens and antibodies, toxins and antitoxins have found their way into the chapters of a rapidly developing science. Wherever one turns, not only in biology, but also in physiology, pharmacology, pathology, bacteriology and hygiene, physical chemistry has found its applications. It matters little whether we insist that it is merely a new name for old doctrines or a novel interpretation of long-recognized facts. Even if physical chemistry represents nothing more than a point of view, it is here to be reckoned with and to be welcomed as every help to progress ought to be. Encouraged in the belief that there is a greater future for the physicochemical conceptions in the biologic sciences, prominent workers in this field have joined to organize a new journal devoted thereto. Under the editorship of J. Traube of Berlin, together with H. J. Hamburger of Groningen, V. Henri of Paris and Jacques Loeb of New York, the new *Internationale Zeitschrift für physikalisch-chemische Biologie* is about to be launched in Leipsic. Its international character is further attested by the large list of collaborators, among whom are the American workers Drs. J. F. McClendon of Minnesota, E. W. Harvey of Princeton, L. J. Henderson and W. J. Osterhout of Cambridge, Mass., A. B. Macallum of Toronto, A. P. Mathews of Chicago and T. B. Robertson of Berkeley, Cal. It can scarcely be said that there is to-day a dearth of journals of science. The only justification for new entrants into this field lies in an occasional need of bringing within closer range the related contributions from many domains. We must assume that the ready cooperation of so many eminent workers is a guarantee of the desirability of the new enterprise. Let us hope that the effect of the new journal on the progress of a young science will be, as suggested by its first editorial announcement, that of a catalyzer hastening reactions.

ANOTHER CLEAN RECORD IN THE CANAL ZONE

In THE JOURNAL for Oct. 25, 1913, the report of the department of sanitation of the Isthmian Canal Commission for September was reviewed,[1] showing that during that month not a single white man, woman or child from the United States had died from disease on the Canal Zone. The report for February, 1914, shows that another record has been established. During that month there were 7,592 white employees. Among this number, equal to the population of a good-sized city, there was not a single death from disease during the month. Two white employees were killed by accident, one by electric shock and the other by injury received on the railroad, but no white employee, either American or foreign, died from disease during that time. As might be expected, the death-rate among other classes was equally low. Of the 5,309 white employees from the United States, there was only a single death by violence. Of the 3,875 white women and children from the United States, there was one death from accidental drowning and three from disease. One, a child of 4 years, died of diarrhea; another, a woman of 70, died of old age, and a third, a woman of 44, died of pulmonary tuberculosis. Out of a total of 9,184 white American employees and their families, there were only three deaths from disease and two from violence, while among the total 10,963 Americans on the Canal Zone, there was only a single additional death from violence, making a total of six deaths for the month among nearly eleven thousand persons, equal to an annual average death-rate of 6.56 per thousand. Nor are the benefits of improved sanitary conditions limited to white employees and their families. In February, 1914, there were 41,867 colored employees, and among this number there were only twenty-two deaths from disease and six deaths from violence, making an average death-rate per thousand from disease of 6.31, equivalent to a total annual average death-rate, for the entire 49,459 employees, of 5.34 per thousand. Of the twenty-two deaths, four were from pneumonia, seven from tuberculosis and one each from organic disease of the heart and typhoid fever, leaving nine deaths from all other diseases. After living for five or six years amid conditions which have produced such a startling reduction in the death-rate, will the men who have dug the Panama Canal be able to find

1. A Clean Record in the Canal Zone, Current Comment, THE JOURNAL A. M. A., Oct. 25, 1913, p. 1544.

any city in the United States which is sufficiently cleanly and healthy for them to live in? Let us hope that the ten thousand Americans, returning to this country after a practical demonstration of what modern scientific knowledge can do to prevent disease, may prove to be the little leaven which will leaven the entire lump. If this is the case, the indirect benefits of the Panama Canal will be incomparably greater than its commercial or military value.

FULL-TIME CLINICAL TEACHERS AT HOPKINS

Two months ago,[1] comment was made relative to the new plan proposed for the employment in the Medical Department of Johns Hopkins University of full-time clinical teachers. The plan, it will be remembered, is that the heads of the departments of medicine, surgery and pediatrics are to give their undivided time to teaching and research. They will be free to act as consultants in private cases, but any fees earned from such consultations are to be turned into the university treasury. It is now announced[2] that the three positions referred to have been filled. The chair of medicine has been accepted by Dr. Theodore C. Janeway, Bard professor of medicine in Columbia University and director of the Medical Division of the Presbyterian Hospital of New York. The chair of surgery will continue to be held by Dr. William S. Halsted. The chair of pediatrics has been accepted by Dr. John Howland, formerly associate in pediatrics at Columbia University and later professor of pediatrics at the Washington University Medical School, St. Louis. A year ago Dr. Howland was called to be physician-in-charge of the Harriet Lane Home for Invalid Children — the pediatric clinic of the Johns Hopkins Medical School. No full-time scheme for any of the departments referred to would be complete unless an adequate income was at hand, not only to support the professors, but also to provide the needed assistants, laboratories, equipment, etc. Each department would need to be completely organized and each member of the organization would require facilities adapted to his particular kind of work. The sum involved is so large that even those who are advocating this plan think it improbable or even inadvisable that the scheme at present be generally adopted. The full-time organization, according to the plan proposed, should be put to the test, and its superiority proved before being given any general recognition. It is quite generally recognized that some reorganization whereby clinical teaching is placed on a more academic basis is highly desirable, but there are many who have their doubts regarding what is now referred to as "the Hopkins plan." Clinical progress must be stimulated and men must be trained willing to devote themselves more largely to science and humanity on terms more equal to those obtaining in the laboratory branches. If the Hopkins plan brings about these results it will have demonstrated its value and indicate that the plan is worthy of a wider adoption.

1. "A New Departure in Clinical Teaching," editorial, THE JOURNAL A. M. A., March 14, 1914, p. 853.
2. Medical News, page 1484, this issue.

A PRACTICAL BEAUTY HINT

The use of cosmetics and other artificial aids to attractiveness is as old as the human race. To Darwin and students of anthropology in general, decorative applications were a feature of selection — of attraction and sexual selection. The cheek covered with rouge, the heavily elaborated eyebrow and the colored wig, it appears, originated at an early period among the class of courtesans. It has been remarked that "time has taken the taint from the tint," and the wide employment of artificialities to-day would seem to indicate the truth of this observation. The host of advertised medicaments, the beauty columns which grace or disgrace almost every metropolitan newspaper, the display-windows of the various department-stores catering to a large feminine clientèle bear further witness to the fact. The average man of rational clean mind does not approve of cosmetic innovations in his own feminine kinsfolk. He would prefer to see these radical departures from the natural confined to the chorus lady and the public tangoist. The physician always warns against the use of cosmetic preparations, because most of them are dangerous. To him the natural and healthy has always seemed to be typical of beauty. Even the editor of the lay press, however, has seen the ridiculous in the beauty column, and the following satirical excerpt taken from a Southern weekly[1] contains what is perhaps an ideal beauty hint: "For giving the face a good color, get one pot of rouge and one rabbit's foot. Bury them two miles from home and walk out and back once a day to see that they are still there."

THE PERCENTAGE OF OXYGEN SATURATION OF ARTERIAL BLOOD

Certain statistics with respect to the normal functions of the human body are transmitted from one generation of students to the next with little concern for their subsequent verification. This is true of some of the data relating to the blood of man. Now and then chance furnishes some new item to corroborate an old one in a way that increases respect for the permanence of scientific knowledge. We are taught, for example, that the blood is practically saturated with oxygen as it passes the lungs under ordinary conditions of circulation and respiration. An expert in blood-gas analysis[2] was recently afforded an opportunity to verify this by collecting some arterial blood, uncontaminated either with air or anesthetics, for analysis during the process of a transfusion. The blood proved to be 94 per cent. saturated with oxygen.

1. Southern Mercury.
2. Cooke, A., and Varcroft, J.: Direct Determination of the Percentage Saturation of Arterial Blood with Oxygen in a Normal Person, Jour. Physiol., 1914, xlvii, 35.

Dirt.—The causative agents of diseases not being comprehended, naturally, propagating agencies are not understood. That dirt and disease are coexistent is obvious to the sanitarian who knows the relation of cause and effect, but to many people dirt is simply undesirable, not a menace to health.—Dowling, in *Bull. Texas State Board of Health.*

Medical News

ALABAMA

Personal.—The sanatorium of Dr. Anti C. Watts, Fulton Springs, was destroyed by fire, April 16, with a loss of $6.000, partially covered by insurance.

State Association Meeting.—The annual meeting of the Medical Association of the State of Alabama was held in Montgomery, April 21-24, and the following officers were elected: president, Dr. Benjamin B. Simms, Talladega; vice-president, Dr. Jacob U. Ray, Jr., Woodstock; state health officer, Dr. William H. Sanders, Montgomery (reelected). Birmingham was selected as the next place of meeting.

ARIZONA

State Associaticn Meeting.—The twenty-third annual meeting of the Arizona Medical Association was held in Tucson, April 21 and 22, under the presidency of Dr. Ira E. Huffmann, Tucson. The following officers were elected: president, Dr. John W. Flinn, Prescott; vice-presidents, Drs. Robert Ferguson, Bisbee; Alfred J. Murietta, Jerome, and William W. Wilkinson, Phoenix; secretary, Dr. Clarence E. Yount, Prescott (reelected); and councilors, north district, Dr. William H. Bucher, Kingman; south district, Dr. Earl R. McPheeters, Clifton. In the afternoon of April 22 the wives of the visiting physicians were entertained at a Spanish luncheon at the residence of Dr. and Mrs. Ira E. Huffmann, and in the evening were entertained by Dr. and Mrs. Meade Clyne.

ARKANSAS

Executive Staff Appointed.—At a meeting of the Sebastian County Medical Society at Fort Smith, April 14, the following members were appointed to serve as executive staff of the Sparks Memorial Hospital during the ensuing year: Drs. Herbert Moulton, George F. Hynes, J. Gilbert Eberle, St. Cloud Cooper, Robert G. Carlin, Charles S. Holt, John McGinty and A. Earl Hardin.

CALIFORNIA

Typhoid Vaccination in California.—March 1 the State Hygienic Laboratory began issuing typhoid vaccine free to physicians with the idea of attempting to immunize a considerable portion of the population. Typhoid fever was responsible for 500 deaths in the state in 1913. With the vaccine sent out is a circular of instruction as to how it should be used. The vaccine as employed in California is prepared according to the method of Gay and Claypole of the University of California and is made by treating a culture of typhoid bacilli with immune serum, killing with alcohol, grinding and removing certain undesirable constituents. This vaccine has been shown to produce fewer unpleasant symptoms than other vaccines and its protective qualities are said to be greater. Each c.c. of the vaccine represents 750 million bacteria.

CONNECTICUT

Personal.—Dr. George H. Bodley has been appointed and Dr. Henry Bray reappointed a member of the Board of Health of New Britain.

New Officers.—Windham County Medical Association, one hundred and twenty-first annual meeting at Willimantic, April 16: president, Dr. Charles E. Hill, East Killingly; secretary-treasurer, Dr. William P. S. Keating, Willimantic. ——Fairfield County Medical Association, one hundred and twenty-second annual meeting, at Bridgeport, April 14: president, Dr. George H. Noxon, Darien; secretary, Dr. Eli B. Ives, Bridgeport.——Hartford County Medical Association, one hundred and twenty-second annual meeting at Hartford, April 7: president, Dr. William R. Miller, Southington; secretary-treasurer, Dr. Albert R. Keith, Hartford.—— Tolland County Medical Society, one hundred and twenty-second annual meeting at Rockville, April 21: president, Dr. Cyrus B. Newton, Stafford Springs; secretary-treasurer, Dr. Eli P. Flint, Rockville.——New Britain Medical Society, organized recently: president, Dr. George H. Bodley.

DELAWARE

Forty Years in Practice.—Dr. Willard Springer, Wilmington, celebrated April 22 the fortieth anniversary of his entering into practice in Wilmington. A dinner was given in his honor by the Newcastle County Medical Society at which Dr. Springer read a paper entitled: "Forty Years in the Practice of Medicine."

Personal.—Dr. L. August H. Bishop has been elected president and Edwin S. Anderson, vice-president, of the Board of Health of Dover.——Dr. Stacy B. Collins, Seaford, has been appointed a member of the state tuberculosis commission.——Dr. Frank H. Edsall, Wilmington, as a result of a competitive examination, has been appointed superintendent of the Department of Health of Jersey City, N. J.——Dr. Joseph P. Pyle, Wilmington, has gone abroad.

GEORGIA

New Officers.—Ware County Medical Society: president, Dr. James J. Beaton, to fill the vacancy caused by the death of Dr. Marvin M. Johnson; vice-president, Dr. Paul P. Lane, all of Waycross.

Personal.—Drs. Archie Griffin, James M. Smith and Joseph H. Thomas have been reelected members of the Board of Health of Valdosta.——Dr. Victor H. Bassett was elected president, April 21, of the newly organized Anti-Tuberculosis Association of Savannah.

Health Report of Augusta, Ga.—That Augusta has an efficient health department is shown by the report of that body for the year 1913. This report, a pamphlet of 80 pages, shows that much improvement in health conditions occurred over previous years. The population of Augusta is 51,000, of which 27,400 are white and 23,600 negroes. In 1913 there were 377 white deaths, a ratio of 13.7 per 1,000, and 491 negro deaths, a ratio of 20 per 1,000. This gives an average of 17 per 1,000 which is a reduction of 1.6 per 1,000 over the previous year. Attention is called in the report of the reduction in deaths from typhoid and malaria. For malaria there were 12 deaths in 1913 as against 27 in 1912. For typhoid, 9 in 1913 against 14 in 1912. A gratifying feature is the reduction of mortality of children under 5 years of age. In 1912 there were 221 deaths while in 1913 there were 165. On account of careful school inspection the case incidence and death-rate among children from contagious diseases have been very satisfactory. There were 32 deaths from pellagra during the year.

ILLINOIS

New Officers.—Jersey County Medical Society at Jerseyville, April 23: president, Dr. Augustus K. Van Horne; secretary, Dr. Frederick M. Doyle, both of Jerseyville.

Personal.—Dr. George Pennington, West Alton, was thrown from a wagon and seriously injured, April 23.——Dr. Arthur Parsons, Geneseo, suffered the fracture of several ribs and severe cuts and bruises by the overturning of his automobile, April 21.

Hospital Notes.—At a meeting of the board of directors of Hillsboro Hospital Association, April 20, Drs. George A. Clotfelter, Zeb V. Kimball and Homer A. Seymour were elected members of the building committee for the new hospital, which is to be ready for occupancy early in November. ——The new Deaconess Hospital, Peoria, was formally opened, April 21. In the evening a meeting of the Peoria Medical Society was held in the institution.

Medical Reserve Corps Meeting.—The annual meeting of the Medical Reserve Corps, United States Army, Illinois Division, was held April 30, under the presidency of Lieut. Junius C. Hoag, and the following officers were elected: president, Lieut. William L. Baum; vice-president, Lieut. William H. Wilder; secretary, Lieut. John A. Hornsby (reelected), and councilors, Lieuts. Louis E. Schmidt and Frank P. Lynch, all of Chicago. Among the speakers were Col. William Stephenson, M. C., U. S. Army, Col. Philip F. Harvey, U. S. Army (retired), Capt. Charles C. Billingslea, M. C., U. S. Army, and Lieuts. Patrick J. H. Farrell and Frank Billings, M. R. C., U. S. Army.

Chicago

Railroad to Build Hospital.—The Illinois Central Railroad announces that ground has been purchased on Stony Island Avenue, facing Jackson Park, for a hospital to be established by the Illinois Central Railroad, the erection and equipment of which will cost more than $400,000. The building is to be six stories high and will be primarily for the benefit of employees of the railroad and passengers injured on the railroad.

Dr. Frank Honored.—Dr. Jacob Frank, surgeon-general of Illinois, was guest of honor at a banquet given April 28

by his friends of the medical profession of Chicago, and the Medical Reserve Corps, U. S. Army and Illinois National Guard. Dr. Charles P. Caldwell, president of the Chicago Medical Society, was toastmaster, and responses were made to toasts by Drs. A. Augustus O'Neill, Patrick J. H. Farrell, John B. Murphy, Arthur M. Corwin and Noble M. Eberhart. Dr. Martin M. Ritter, in behalf of those present, presented Dr. Frank with a sabre.

The Chicago Surgical Society.—The secretary of the Chicago Surgical Society calls attention to an item which appeared in these columns two weeks ago. The item stated that the Chicago Surgical Society had changed its name to the Chicago Academy of Surgery. The Chicago Surgical Society was organized in 1900 and still exists under that name. The society referred to in our previous item is a recently organized one, which incorporated under the name of the old Chicago Surgical Society. A bill to restrain the new society from using the name "Chicago Surgical Society" was presented to the court which sustained the contention, making it necessary for the new society to change its name.

LOUISIANA

New Officers.—Louisiana Railroad Surgeons Association at New Orleans: president, Dr. Frederick W. Parham, New Orleans.

State Society Meeting.—The thirty-fifth annual meeting of the Louisiana State Medical Society was held in New Orleans, April 20-23, under the presidency of Dr. Fred J. Mayer, Opelousas. On the Sunday before the opening of the meeting a health symposium was held in Tulane Theater on "The Relation of Religion to Hygiene and State Medicine," at which a number of the most prominent clergymen of New Orleans delivered addresses. Lake Charles was selected as the next place of meeting and the following officers were elected: president, Dr. George S. Bel, New Orleans; vice-presidents, Drs. J. Ashton Blanchard, Shreveport; David J. McAnn, Atkins; Everard M. Mahler, New Orleans; secretary-treasurer, Dr. Laurence R. De Buys, New Orleans (reelected), and councilors, first district, Dr. Wilkes H. Knolle, New Orleans; second district, Dr. Homer J. Dupuy; third district, Dr. Leon J. Menville, Houma; fourth district, Dr. Hardy H. Smith, Cotton Valley; fifth district, Dr. Oswald W. Cosby, Monroe; sixth district, Dr. J. N. Lee, Marthaville; seventh district, Dr. Charles A. Gardiner, Sunset, and eighth district, Dr. E. Lee Henry, Lacompte.

MARYLAND

Sydenham Contract Awarded.—The contract for the new ward building at Sydenham has been awarded. The cost will be $17,225. The building will be used as a detention house instead of a measles ward. The new building will make Sydenham more modern and will provide quarters for the nurses.

New State Officers.—At the annual meeting of the Medical and Chirurgical Faculty the following officers were elected: president, Dr. James W. Humrichouse, Hagerstown; vice-presidents, Drs. Alexius McGlannan, Baltimore; James E. Deets, Clarksburg, and R. E. Lee Hall, Pocomoke City; treasurer, Dr. William S. Gardner, Baltimore; secretary, Dr. John Ruhräh, Baltimore; delegate to the American Medical Association, Dr. J. Hall Pleasants, Baltimore; alternate, Dr. D. E. Stone, Mount Pleasant; members of State Board of Medical Examniers, Drs. John McP. Scott, Hagerstown, and Henry M. Fitshugh, Westminster; councilors, Drs. Charles O'Donovan, Baltimore; Peregrine Wroth, Jr., Hagerstown; Lewis C. Carrico, Bryantown, and William S. Archer, Bel Air.

Janeway at Johns Hopkins.—Dr. Theodore C. Janeway, now Bard professor of medicine in Columbia University and director of the medical department of the Presbyterian Hospital of New York, has been appointed professor of medicine in Johns Hopkins University, succeeding Dr. Lewellys F. Barker, who, however, will retain his connection with the university in an important capacity. The appointment will take effect at the close of the present academic year, and Dr. Janeway will probably come to Baltimore in the summer to organize his new department. The school is most fortunate in securing the services of so distinguished a clinical teacher, investigator and physician to join with Drs. William S. Halstead and John Howland in putting into effect the reform in medical education made possible by the gift of $1,500,000 by the General Education Board. The establishment of the department of medicine, of surgery and of pediatrics on the full-time or university basis was made possible by the gift of $1,500,000 to be known as the William H. Welch endowment for clinical education and research by the General Education Board last October. The chairs of surgery and of pediatrics on the reorganized basis have already been filled by the continuance of Dr. William S. Halstead as professor of surgery and Dr. John Howland as professor of pediatrics under the new conditions. Drs. Barker and Thayer, who were unable to accept the university professorship under the new conditions, will continue their connection with the hospital and university.

Baltimore

Personal.—Dr. J. H. Mason Knox has been appointed a member of the Board of State Aid and Charities.——Dr. Hugh Hampton Young has been reappointed a member of the lunacy commission.——Dr. Albert T. Chambers has been reappointed by the mayor a member of the school board.——Dr. John Howland has sailed from New York for Bremen.——Dr. Alexander D. McConachie will spend the summer traveling in Europe.

MASSACHUSETTS

Resignation of Professor Briggs.—Dr. Frederic M. Briggs has tendered his resignation as professor of surgery and secretary of the faculties of Tufts College Medical and Dental schools, to take effect Sept. 1, 1914.

Personal.—Dr. Edward J. Mahoney, Springfield, has succeeded Dr. Simon J. Russell, resigned, as health officer of Springfield. Dr. Russell expects to spend the year in study abroad.——Dr. and Mrs. Edward R. Cutler, Bridgewater, celebrated their golden weeding anniversary April 27.

New Officers.—West Roxbury District Medical Club, April 15: president, Dr. Edward N. Libbey, Roxbury; secretary-treasurer, Dr. Francis P. McKenna, Jamaica Plains.——Plymouth District Medical Society at Brockton, April 16: president, Dr. Charles E. Lovell, Whitman; secretary-treasurer, Dr. Alfred C. Smith, Brockton, both reelected.——Brockton Medical Society, April 23: president, Dr. John R. Noyes; secretary, Dr. Harrison A. Chase.

MICHIGAN

Sanatorium Opened.—The new municipal sanatorium of Kalamazoo, erected at a cost of $45,000, was officially opened April 21.

Fund Raised for Medical Mission.—The campaign for a fund for the University of Michigan Medical Mission at Buzrah, Arbia, closed April 23 with subscriptions amounting to $4,850.

Shurly Tablet Unveiled.—A mosaic tablet, bearing an inscription describing the sterling qualities of Dr. Ernest L. Shurly, Detroit, was unveiled in the vestibule of the Detroit College of Medicine, April 19. Dr. J. Henry Carstens presided. Dr. Shurly's niece, Mrs. Kinzie Bates, Asheville, N.C., was the donor of the tablet.

Appropriations for Detroit Hospitals.—The Committee on Public Health and Hospitals of the Board of Estimates of the Detroit City Council, approved the appropriation of $715,000 for hospital extensions, including $400,000 for a tuberculosis hospital, $100,000 for the first unit of a new municipal hospital, and $125,000 for the purchase of 25 additional acres of land adjoining the present hospital site.

Personal.—Dr. S. Rudolph Light has been elected president of the Kalamazoo Anti-Tuberculosis Society.——Dr. Henry V. Tutton, Benton Harbor, who was operated on for appendicitis recently at Mercy Hospital, has recovered and resumed practice.——Dr. Bret C. Nottingham, Lansing, is reported to be critically ill with carcinoma of the stomach in Harper Hospital, Detroit.——Dr. Walter L. Slack has succeeded the late Dr. Daniel B. Cornell as eye and ear surgeon of the Pere Marquette System at Saginaw.

MINNESOTA

New Officers.—Stearns-Benton County Medical Society at St. Cloud, April 16: president, Dr. Pierre A. Hilbert, Melrose; secretary, Dr. John C. Boehm, St. Cloud.

New Sanatorium.—The Polk County Sanatorium Commission has purchased 35 acres of land south of Red River and west of Crookston, for $2,000 an acre, as a site for the county tuberculosis sanatorium.

Foreign Surgeons in Rochester.—A special train brought nearly a hundred of the prominent surgeons of Europe to

Rochester, April 22, where they spent two days attending clinics of the Mayo brothers.

Personal.—Dr. William J. Mayo, Rochester, sailed for Europe April 30.——Dr. Harry P. Packard, physician in charge of the Mission Hospital, Oroomiah, Persia, has been visiting in Rochester and Minneapolis. He will return to Persia next month.——Dr. John Milton Armstrong, St. Paul, has returned from abroad.——Dr. Arnold Schwyzer and family, St. Paul, have sailed for Europe.

Public Health School Planned.—Plans for the establishment of a school of public health have been adopted by the administrative board of the medical school of the University of Minnesota. The function of the proposed school will be to consider and recommend measures pertaining to the health of the university community and to put into effect university regulations, either directly or by advisement.

Reorganization of Divisions of State Board.—A reorganization of the laboratory, epdemiologic and sanitary engineering divisions of the State Board of Health was perfected at a meeting held in St. Paul, April 14. The work of the laboratory division will hereafter be divided between the two divisions of infectious diseases and sanitation. Dr. Albert J. Chesley will retain his position as head of the division of infectious diseases, and in addition will take over the laboratory work which has to do with diagnosis of diseases. Dr. Robert H. Mullin, in charge of the present laboratory division, and Prof. F. H. Bass, head of the sanitation division, will retire that they may devote their entire time to their teaching work at the University of Minnesota. The new sanitary division will be under the direction of Mr. H. A. Whittaker, assistant director and chief chemist of the laboratory division.

NEW MEXICO

Typhus Fever.—The epidemic of typhus fever in the Navajo settlement at Canoncito Cojo has subsided. The last Indian to have the disease became ill March 12 and on March 28 the fever had disappeared. In all there were twenty-seven cases, eleven adults and sixteen children. Four cases were fatal. Of the dead, two were adults and two were children. The deaths occurred in the early stages of the epidemic. The prompt and strict measures taken in the beginning of the epidemic by the superintendent of the United States Indian Service, P. T. Lonergan, proved efficacious. The destruction of practically the entire Indian settlement was necessary to terminate the epidemic. On the order of Dr. Day, sixteen "hogans" were burned and new huts were erected in a different locality to take their place. The clothing of the Indians was also burned and new clothing supplied. Dr. Day believes the disease originated from the visit of an old Mexican to the settlement.

NEW YORK

New Officers.—Rochester Medical Society, April 14: president, Dr. William B. Jones; secretary, Dr. David B. Jewett.

Tuberculosis Camp to Open.—The Watertown Anti-Tuberculosis Society is preparing for the opening of its camp at Huntingtonville. The camp will be open July 1, and it is expected that the hospital will be ready for occupancy before next winter.

State Society Meeting.—The one hundred and eighth annual meeting of the Medical Society of the State of New York was held in New York City, April 28-30, under the presidency of Dr. William F. Campbell, Brooklyn. The following officers were elected: president, Dr. Grover W. Wende, Buffalo; vice-presidents, Drs. Myron B. Palmer, Rochester; Samuel W. S. Toms, Nyack, and Robert Elliott, Willard; secretary, Dr. Wisner R. Townsend, New York City (reelected); treasurer, Dr. Alexander Lambert, New York City (reelected). The proposition to place laymen in charge of the medical publications of the society was voted down by the House of Delegates.

Women Elect Officers.—The eighth annual meeting of the Women's Medical Society of New York was held in New York City, April 27, under the presidency of Dr. Marion Craig Potter, Rochester, who had for the subject of her presidential address a survey of the medicolegal work of women physicians during the past twenty years in cases of physical injury in New York State. The following officers were elected: Dr. Angenette Perry, New York City, president; Dr. Evelyn Baldwin, Rochester, second vice-president; Dr. Cornelia Thomas, Rochester, treasurer. At the public meeting Dr. Lillian South, Bowling Green, Ky., delivered an illustrated lecture on hookworm.

New York City

First Typhus Death.—The first death from typhus fever since the present visitation occurred April 27, the victim being a Greek, 43 years of age, who boarded the steamship *Madonna* at Naples.

New Dean for University and Bellevue.—It is reported that Dr. William Hallock Park has been named by the Council of New York University as the dean of the University and Bellevue Hospital Medical College, to take the place of Dr. Egbert LeFevre, who died March 30.

Exhibition of Lincoln Hospital Work.—An exhibition of the industrial work done in the Home department of the Lincoln Hospital and Home at One Hundred and Forty-First Street and Southern Boulevard, was held April 22-24. This work comprised the product of the industrial department and consisted of woven rugs, garden and other baskets, etc.

Safety Medal Conferred on Surgeon-General Gorgas.—The American Museum of Safety at its meeting April 27, conferred the Dr. Louis Livingston Seaman medal on Surgeon-General William C. Gorgas for his Canal Zone achievements. In conferring the medal Prof. Frederick R. Hutton ranked Dr. Gorgas as the man who had done the greatest good to humanity in this generation.

Train Teachers for Feeble-Minded.—New York University is organizing a department offering a two-years' course for the training of teachers for feeble-minded and backward children. The courses will be organized under the School of Pedagogy but will have the cooperation of the Medical School, Summer School and Extramural Division. The program is tentatively divided into five courses: Physical and mental factors, psychologic factors, sociologic factors and industrial factors.

Care of Convalescents.—At a meeting of the Monday Club, April 20, Dr. Frederick L. Brush, superintendent of the Winifred Masterson Burke Relief Foundation, outlined the plans which the directors are making for the care of convalescents: the erection of an extensive plant at White Plains, where an estate of 60 acres has been secured. Thirteen out of the contemplated twenty-two buildings have already been finished, and when completed the institution will be able to care for 3,000 convalescents a year.

Food Standard Urged.—The Department of Health urges the adoption of a food standard and points out that this is an age of standardization and that it is more important that food should be standardized than that many other articles should be subjected to this test. By standardization of food would be meant the definition of each food in terms of its chemical and physical components. New York State has already standardized wine, milk, butter, honey, cider, vinegar, evaporated apples and maple sugar. The City of New York also defines "spot eggs;" otherwise there are no food standards in this state.

The National Commission of Milk Standards.—This Commission at its recent meeting in this city condemned the present methods of manufacturing ice cream and advised a campaign for the pure product. Examinations were made of some two hundred samples of ice cream from stores, restaurants and hotels and it was stated that the percentage of bacteria varied from 1,000 to 21,000,000 per cubic centimeter. The small stores of the East Side sold the poorest ice cream and that used by druggists at the big soda fountains was also found to be of poor quality. It was stated that while the butter supplied to the city was better than the ice cream, there was much room for improvement. The Commission recommended the pasteurization of all milk used in the manufacture of butter or ice cream.

France Honors Flexner.—Dr. Simon Flexner, Director of the Laboratories of the Rockefeller Institute for Medical Research, has received notice through the French Ambassador in Washington that the Cross of Chevalier of the Legion of Honor has been conferred on him by the President of the French Republic. This honor has been bestowed in recognition of the services which Dr. Flexner has rendered to medical science through his own discoveries and through his administration of the Rockefeller Institute. Special mention is made in the award of the assistance given to France at the time of the epidemic of cerebrospinal meningitis, which prevailed in 1909, by sending to the Pasteur Institute in Paris a supply of antimeningitis serum which was successfully used in combating that epidemic.

Plans Large Cancer Research Institution.—Cornell University Medical College and the General Memorial Hospital are planning for a large cancer hospital. There will be

available for the purpose a large supply of radium and unique facilities for laboratory research. It has been announced that more than $1,000,000, exclusive of the value of the hospital buildings, have been provided. Allan A. Ryan has contributed $50,000 of this sum and it is understood that Dr. James Douglas has contributed a much larger sum and has made arrangements to turn over to the hospital his half interest in the first 7 grams of radium which he and Dr. Howard Kelly were to get from the output of Paradox Valley in the course of the government radium tests. There are at the present time 100 milligrams of radium available for the work. The management of the hospital will be under the Faculty of the Cornell University Medical School.

Health Guards for Children.—Late in 1913 a request was made that the Board of Education permit the posting of a copy of the Health Department's circular containing information regarding the precautions to be taken against the spread of contagious diseases. The Board of Education at once gave its consent to this measure and now has asked that such a circular be placed in the hands of every child. In response to this request 800,000 copies of an abridged and simplified circular are being prepared for circulation. By this means the information will be carried to many homes. The Bureau of Infectious Diseases recently made a study to ascertain what proportion of secondary cases of contagious diseases follow when patients are treated in their homes or in hospitals. It was found in diphtheria that when the patients were quarantined at home the percentage of secondary cases was 13 per cent., when the patients were removed to hospitals, 1 per cent. In scarlet fever the secondary cases where the child was quarantined at home were 9 per cent.; in hospitals 3 per cent. The percentage in measles was 10 per cent. greater when the patients were quarantined at home.

NORTH CAROLINA

Personal.—While fording a swollen river below Taylorsville, Dr. A. M. Edwards of that place narrowly escaped drowning, but was saved by his horse, which swam to the opposite bank.——Dr. Samuel W. Stevenson, Mooresville, is seriously ill with cerebral hemorrhage at his home.

District Society Meeting.—The Sixth District Medical Society held its annual meeting in Durham, April 23, under the presidency of Dr. Charles G. Nichols, Roxboro. The society was entertained at dinner at the Country Club. The president of the State Society, Dr. James Parrott, Kinston, delivered an address on "The Doctor's Duty to His Fellow Doctor."

OHIO

Medical Society History Published.—Summit County Medical Society has issued a booklet entitled "Summit County Medical Society, 1842-1914," which gives a list of members since the organization of the society with specialized information regarding each.

New Officers.—Montgomery County Medical Society, clinical section: chairman, Dr. Erle A. Baber; secretary, Dr. Harry H. Hatcher, both of Dayton.——Eastern Ohio Medical Society: president, Dr. George H. Irvin, Orrville; secretary, Dr. Edwin S. Lyon, Akron.

Personal.—Dr. Frank A. Morrison, Uhrichsville, is reported to be ill with small-pox.——Dr. Hervey W. Whitaker, Columbus, is ill at his home with erisypelas.——Dr. Will H. Woodworth, Delaware, announces that he will remove to Norfolk, Va., June 1, and that his practice will be limited to diseases of the eye.——Dr. and Mrs. John Edwin Brown and son Columbus, will sail for Europe May 26.——Dr. Ira H. Hawes, Arcanum, has been appointed colonel of the Ohio State University regiment, Columbus.

PENNSYLVANIA

Typhus Fever at Lancaster.—A well-developed case of typhus fever was discovered in a local hospital by the Lancaster Board of Health, April 28.

Allegheny County Tuberculosis Hospital.—The State Board of Health and Charities, April 8, approved the plans for the construction of a Tuberculosis Hospital for Allegheny County, at a cost of from $50,000 to $100,000.

Personal.—Dr. and Mrs. James A. Irwin, Philadelphia, sailed for Europe May 7.——Dr. George R. Moffitt of Harrisburg, has been appointed bacteriologist and chemist, meat and milk inspector of the state.——Dr. Edward G. Heyer of Hazelton, has been elected superintendent of the Nanticoke Hospital to succeed Dr. August Trapold, resigned.——Dr. Clarence R. Phillips of Harrisburg has been appointed state health inspector for Dauphin County to succeed Dr. Paul A. Hartman, deceased.——Dr. Ellis M. Frost, instructor in clinical medicine and microscopic anatomy in the Pittsburgh School of Medicine, has been appointed director of the Department of Health of Pittsburgh.

Philadelphia

Health Director Resigns.—Dr. Joseph F. Neff, director of the Department of Health and Charities, under the administration of Mayors Reyburn and Blankenburg since 1907, resigned because of ill health, April 29, to take effect immediately, and Dr. Richard H. Harte has been appointed his successor.

Samuel D. Gross Prize.—The committee having in charge the Samuel D. Gross prize, valued at $1,500, of the Philadelphia Academy of Surgery, announces essays in competition for the prize will be received until Jan. 1, 1915. The essays, which must be written by a single author in the English language, should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 19 S. Twenty-Second Street, Philadelphia," on or before Jan. 1, 1915. Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, containing the name and address of the writer.

TEXAS

New Officers.—Denison Medical Society, April 2: president, Dr. David K. Jamison, Sherman; secretary, Dr. Alfred M. Kahn, Denison.——Fort Worth Doctors' Lunch Club: chairman, Dr. George D. Bond; vice-chairman, Dr. William C. Rountree, and treasurer, Dr. Henry B. Trigg.

Quarantine Camp Established.—Acting on the advice of Quarantine Officer Irvy L. McGlasson, Galveston, the governor has announced that the American refugees from Mexico will be retained in a detention camp for a period of six days after their arrival, and tents have been procured in sufficient number for use of the refugees.

Quarantine Regulations Not to Be Suspended.—Governor Colquitt of Texas has refused the request of the State Department to suspend quarantine regulations in the cases of the refugees from the war zone in Mexico landing in Texas. He has suggested that they be landed at New Orleans where there is a Federal detention hospital. Citizens of Port Aransas have protested against the disembarking from the yacht *Wakivaof* of 130 refugees direct from Tampico, from which point they were taken to Aransas Pass for quarantine instead of being taken to the state quarantine station on Harbor Island.

GENERAL

Joint Meeting.—A joint meeting of the Cass County (N. Dak.) and the Clay-Becker Counties (Minn.) Medical Societies was held in Fargo, N. Dak., April 27. Dr. Frank S. Bissell, Minneapolis, read a paper on "The Roentgen-Ray in the Armamentarium of the Internist," illustrated by demonstrations and lantern slides.

Marine Hospitals and Quarantine Stations Made Available for Sick.—By an order issued April 25 by Surgeon General Blue, approved by the Secretary of the Treasury, United States marine hospitals and quarantine stations are made available for the sick and wounded of either the Army or the Navy on written request of the proper military or naval authority. The Public Health Service is to be reimbursed the actual cost of their care.

Barring Out Infectious Diseases.—Secretary of the Treasury McAdoo, on behalf of the Public Health Service, has asked Congress to appropriate and make instantly available, a fund of $100,000 to prevent the introduction and spread of epidemic diseases in the United States. This has special reference to the danger to be apprehended from the introduction of such diseases from Mexico. The fund for the current year for this purpose is exhausted.

Officers in Mexico.—The first military hospital was established in Vera Cruz, May 1, under charge of Maj. Allie W. Williams, M.C., U. S. Army, attached to the Third Field Hospital.——Surgeons Rudolph H. Von Ezdorf and Gregorio M. Guiteras, U.S.P.H.S., have been ordered to report to Admiral Badger at Vera Cruz for duty.——Assistant Surgeons John Tully Vaughn and Richard M. Little, M.R.C., U. S. Navy, sailed for Vera Cruz on the *Morro Castle*, April 23.

International Congress of Neurology, Psychiatry and Psychology.—The increasing amount of research work relative to the nervous system has warranted the Swiss Society of Neurology in calling a Congress of Neurology, Psychiatry and Psychology to be held at Berne, Sept. 7-12, 1914. An organization committee and various international committees have been appointed. Manuscripts, which may be in English, French, German or Italian, should be sent to the secretary, Dr. L. Schnyder, 31 rue Monbijou, Berne, before July 15. Registration and subscription for members is $5.

No Restrictions on Travel on Account of Plague in Havana.—Contrary to the impression given in some newspaper reports, no restrictions have been placed on travel to and from the ports of Cuba on account of the plague in Havana. A statement by Surgeon R. H. Creel in *Public Health Reports* May 1 is to the effect that there has been no "lifting of the quarantine" by the United States authorities as reported, which has given rise to a wrong impression as to the work of the Cuban authorities in combating the plague. The health authorities of both countries are working along the same lines, those of Cuba killing rats and fleas in the buildings in Havana, in the coast-wise shipping and in the cargo outward bound from Havana, and the Public Health Service devoting its attention to ridding ships bound for the United States ports of rats.

California Colleges Not to Merge.—Efforts have been made at various times to merge the medical schools of the University of California and Stanford University. Recently, it is reported, the proposal was made by Stanford University that the schools be united and controlled by a board on which the two universities would have equal representation. The proposal was considered at a conference held recently between committees appointed by the trustees of Stanford University and the regents of the University of California. It is stated, however, that the University of California considered it fundamental that the regents of the University of California have majority control of the board of managers. Since the board of trustees of Stanford University believed they were without authority to turn over the trust to any other institution in which they did not have at least equal voice the union of the medical schools was not accomplished.

Bequests and Donations.—The following bequests and donations have recently been announced:

New York Skin and Cancer Hospital, Society for the Relief of the Destitute Blind, Home for Destitute and Crippled Children, New York City, each $1,000, by the will of Horace Bailey Thacker.

Mt. Sinai Hospital,, Home for Aged and Infirm Hebrews, Lebanon Hospital, New York Institute for the Blind, Hospital for Deformities and Joint Diseases, and Jewish Hospital, New York City, each $2,500; Beth Israel Hospital and German Hospital, New York City, each $5,000, by the will of Emil Levy.

Manhattan Eye and Ear Infirmary, New York City, $2,125 for the support of an eye clinic, and Yale Medical School, New Haven, $1,000, by the will of Dr. Frank J. Parker.

Newton Memorial Hospital, Fredonia, N. Y., for the erection and endowment of a free tuberculous hospital for Chautauqua County, $150,000, by the will of Mrs. Elizabeth M. Newton.

Home for Destitute Crippled Children, Chicago, $1,000, by the will of Mrs. Delia L. B. Conover.

Home for Destitute Children, Chicago, $10,000; Foundlings' Home, Chicago, $10,000, by the will of Henry M. Hooker.

FOREIGN

Deaths in the Profession Abroad.—E. E. J. Golay of Geneva, author of several popular works on infant and child welfare, on diphtheria persisting for a year, on painful abscesses in the bones, etc., aged 66.——F. Delius, for many years chief of the German hospital at Buenos Aires, aged 51. He succumbed to the effect of chronic injury from Roentgen-ray work, which he was the first to introduce into Argentina.——L. Udranszky, professor of physiologic chemistry at Budapest and author of numerous works on this branch of science, especially on furfurol reactions, occurrence and elimination of diamins, etc.

Diphtheria in Cuba.—Some recent statistics show that in the last eleven years, of the 320,039 deaths in Cuba, diphtheria was responsible for 1,850, but all but 19.78 per cent., were in whites. In the general mortality, the whites are represented by 65.7 per cent. and the blacks by 34.3 per cent. By the thousand living inhabitants, the mortality from diphtheria among the whites was 1.06 and 1.02, males and females; among the blacks it was only 0.56 and 0.62 respectively. J. LeRoy presents these figures in the *Revista de Med. y Cir.* of Havana and queries what can be the cause of this superior resisting power on the part of the blacks.

CANADA

Improvement at Queens.—The departments of physics, chemistry, physiology and bacteriology and hygiene are to be strengthened at Queen's University, Kingston, owing to the adoption of the five-year course.

School Medical Staff Changes.—Dr. William E. Struthers, chief medical inspector of Toronto Board of Registration, has recommended that Dr. E. R. Langrill be placed on the regular staff, and that the resignation of Dr. R. M. Burgess be accepted.

Foreign Surgeons in Montreal.—About forty of the leading surgeons of Europe visited Montreal before sailing for home from Boston. While in Montreal they were in charge of Drs. George E. Armstrong, Francis J. Shepherd and J. Alexander Hutchison. They were entertained at luncheon at McGill, Principal Peterson doing the honors, and also visited the Montreal General and Royal Victoria hospitals.

Personal.—Dr. Harry C. Burgess, Montreal, has returned from Europe.——Owing to the retirement of Dr. Richard W. Garrett, Dr. Gordon W. Mylks has been appointed professor of pediatrics and gynecology at Queen's University, Kingston, Ont.——Dr. Archibald R. B. Williamson has been appointed professor of obstetrics at Queen's University; Dr. John T. Fotheringham, Toronto, assistant professor of surgery; Dr. E. D. C. MacCallum, lecturer in clinical medicine; and J. M. Farrell, B.A., lecturer in jurisprudence.

Quackery in Ontario.—The province of Ontario seems to be the stamping ground for quackery of all sorts and variety. This state of affairs has been brought about owing to a member of the judiciary rendering an opinion or judgment that practicing medicine meant the giving of drugs. Apparently, however, the profession is getting tired of this state of affairs, and the Council is contemplating a request to the legislature at its next session to amend the Ontario Medical Act. It is nearing a year since the prime minister announced at the opening of the Toronto General Hospital that the government had in contemplation a commission to inquire into medical education and practice in all its bearings. Probably his late severe illness has occasioned the delay in appointing that commission.

Rabies and Typhoid in British Columbia.—A circular letter sent out by the Provincial Board of Health at Victoria calls attention to the fact that rabies has made its appearance among dogs in one of the districts of the province, and that the disease has also occurred in Washington and Oregon. The public is warned of other outbreaks and gives notice that the department is prepared to send the complete treatment for hydrophobia to persons applying, which is to be administered by the local practitioner. Another circular of the Provincial Board gives information as to the occurrence of typhoid fever and the great waste of time and money of the people on this wholly preventable disease, and gives notice that the typhoid prophylactic is available for distribution free of charge. The people are urged to avail themselves of this preventive by being vaccinated. The prophylactic will be sent to any physician or to qualified nurses who apply for it.

Hospital News.—A new $20,000 home for nurses was opened at Woodstock, Ontario, on April 28.——From statistics prepared by the Montreal General Hospital, considerable shortening of the average illness of patients in recent years has been experienced. In 1880 inmates were in bed on the average 26.14 days. There has been a progressive decrease, until the average last year was only 18.4 days. During the same period the average cost of indoor patients has doubled, being now at the rate of $2.15 per patient per day.——The Loyola Convalescent Home was opened in Montreal last week. This organization founded in 1899 as a purely social and literary body has developed into one doing a great amount of useful work in the community of Montreal. This convalescent home is for patients not well enough to resume their former lives but able to leave the hospital; and they will be cared for at no advance on the cost of hospital maintenance. Dr. James J. Guerin is chairman of the medical board.

CANAL ZONE

Personal.—Senior Surgeon Joseph Hill White, U.S.P.H.S., at present on leave of absence to enable him to do research work regarding the hookworm in Central America, arrived at Panama, May 1.

To Rebuild Ancon Hospital.—A committee consisting of Capt. R. E. Wood, chief quartermaster, chairman; Dr. A. B. Herrick, acting superintendent of Ancon Hospital, and Mr. Samuel Hitt, canal architect, has been appointed to sub-

mit recommendations regarding the most practicable plan for reconstructing Ancon Hospital on a permanent basis. In appointing the committee, the governor submitted for its consideration a letter from the chief health officer, in which the latter set forth that many of the buildings in present use are in bad condition, needing constant and expensive repairs, and offered the following suggestions: That a general plan should be drawn up for constructing the entire hospital in concrete buildings, with tile roofs and floors; that the pavilion system, on which the present hospital was laid out, is desirable, but for purposes of economy in construction and administration, the ward buildings should be of two stories; that an effort should be made to concentrate all the administrative features of the hospital in one building, and to place the commissary, and medical and quartermaster's storerooms together; that the Tivoli dispensary should be consolidated with the out-patient department of the hospital; that the two existing steam plants in the hospital should be consolidated, if practicable; and that space for 800 beds should be provided, exclusive of those for the insane, with a minimum allowance of 100 square feet of floor space for each bed.

LONDON LETTER

London, April 24, 1914.

The British Medical Association and Medical Aid Institutes

"Medical aid institutes" constitute a form of contract practice which has always incurred the hostility of the profession. They are established by combinations of working men to provide medical attendance for themselves and their families, and are financed by small regular contributions either collected from the members or deducted at the works from their wages. As a rule they employ whole-time physicians who are paid a salary and whose appointment and control are entirely in the hands of a purely lay committee. These institutes are therefore usually staffed by the failures of the profession. When the insurance act was under consideration, the British Medical Association succeeded in obtaining restrictions to the further development of these institutes and a proviso that money paid to them for medical benefit should be handed over entirely to the physicians.

A committee of the British Medical Association has recently had the subject under consideration and passed a resolution that in order to check the extension of these institutes and to combat those established, the association should endeavor to enlist the support of the staffs of the voluntary hospitals and ask them not only to refuse professional recognition to the medical officers of the institute, but also to refuse to treat patients sent by them to hospitals, except in cases of grave emergency.

This attitude of the association has aroused hostility in the newspapers which support the government. They refer to a memorial addressed to the General Medical Council by the Friendly Societies Alliance as far back as 1892, in which the fact is pointed out that the ordinary club system left much to be desired, as it usually occurred that attendance on a club patient was a secondary consideration with the club doctor. Private patients monopolized his care and attention and he naturally looked more closely after the patients who might pay fees than after those whose money was certain to be paid whether the members were attended to or not. Moreover, a cheese-paring policy of supplying the sick with medicine of inferior quality and in improperly small quantities was adopted. Although the insurance act has removed some of the worst features of contract practice, the frequent complaints of overcrowded surgeries and unsatisfactory treatment are held to justify the continuance of these institutes. It is characterized as a monstrous abuse of trust by the staffs of hospitals which are maintained by charity to refuse to treat patients coming from medical institutes.

Bill to Prevent the Vivisection of Dogs

By a majority of 42 in a house of 202 members, the second reading of a bill to prevent experiments on dogs has been carried in the House of Commons. The bill was introduced by Sir F. Banbury, member for the city of London, who said that scientists could experiment on any animal they liked but the dog. This animal had a special claim for exemption on account of its long association with man, whose best friend he had been. Experiments on the dog were not necessary. The rejection of the bill was moved by Mr. Rollinson, member for Cambridge University, who pointed out that the present power of vivisection in England was restricted by the most careful safeguards. If any further were required, he said, let them be brought forward; but it was not necessary to pass a bill to obtain that object. We had gone far beyond any other country in strictly scientific research. The recent Royal Commission on Vivisection found that for some experiments no other animal was so suitable as a dog or cat. For the government a compromise was proposed—an additional safeguard—that no one should experiment on dogs unless he proved that no other animal was available for the purpose. A memorial against the bill signed by most of the eminent physicians, surgeons and research workers in the country has been presented to the Home Secretary. It is pointed out that the bill would inflict severe injury not only on medicine and surgery, but also on the study of diseases of animals.

Compulsory Notification of Ophthalmia Neonatorum

The president of the Local Government Board has issued an order making ophthalmia neonatorum notifiable throughout the country. According to report of the committee of the British Medical Association, the disease is the cause of at least one-third of the blindness of the inmates below the age of 16 in British schools for the blind.

PARIS LETTER

Paris, April 17, 1914.

Elections and the Public Health Service

The Association ouvrière pour l'hygiène et la sécurité des travailleurs has just posted an appeal to the voters in each electoral district, excerpts from which may be of interest:

"France is occupied too much with that side of affairs which concerns the Bourse and the course of shifting values; and too little interested in the side which has to do with life and the course of human values. Witness the last sanitary statistics published by the Minister of the Interior, which state that for every 10,000 persons, France has 178 deaths a year, Germany 140 and England 135. If this coefficient were with us as it is with Germany or England, from 149,000 to 169,000 fewer persons would die in France each year. And yet France is an admirable country, with a rich soil and a temperate climate. The populace is no more destitute or ignorant than in any other country. The medical body is also educated. What, then, is the cause of the evil? In France the health services are rudimentary; in the central administration they are ridiculously scattered in a dozen directions. No one member of the governing body is responsible for the public health, and no one of them cares! The law of 1902 regarding public health is, in almost every department, a dead letter. In the communes the mayors dare not apply the sanitary regulations, and the prefects dare not ask help of the mayors. This is a question of economizing in human lives, to the extent of more than 150,000 a year. . . . Do you think that from any point of view—economic, sociologic, national—the question is negligible? Or do you think—with us—that instead of occupying the last place in the consideration of public officials this should occupy the first? If you do, make Parliament study the question. Insist that your candidates, of whatever political party, shall promise to urge on the Chamber of Deputies the necessity of serious organization which will further public service along the lines of hygiene in the commune, the department and the state, and above all things to wage methodical war against those twin scourges which are dishonoring and ruining France—tuberculosis and alcoholism. It is a question of life or death for the nation!"

Action of Antirennin on the Digestibility of Milk

At the April 14 meeting of the Académie de médecine, Dr. Louis Gaucher of Montpellier demonstrated that one of the principal causes of intolerance of cow's milk lay in the work done by the stomach in breaking up the curds of casein; human milk or donkey's milk, less rich in casein, is more easily tolerated. This is a factor which must be taken into account in the etiology of gastro-enteritis in babies. This objection to cow's milk may be removed by adding to it a small quantity of antirennin, a ferment which is found in the serum of the sheep or horse. Indeed, antirennin breaks up the coagulated cow's milk into light flakes, making it similar in quality to human milk. In consequence, this method makes it possible to avoid fatigue of the stomach and to prevent gastro-enteritis in children who receive artificial nourishment. This method seems to be indicated also in the case of adults who cannot tolerate a milk diet, as

well as in the case of dyspeptics and victims of gastric ulcer, whose stomachs are given rest.

Has Mortality from Tuberculosis Diminished in Paris?

If the figures furnished by official documents be consulted, it will be seen that, for the city of Paris, tuberculosis has been noticeably on the decline for a number of years. In 1875, of each hundred thousand inhabitants of Paris, 410 died of pulmonary tuberculosis; in 1911, only 343. These are, as a rule, the figures cited when the diminution of mortality from tuberculosis is discussed: they are drawn from the statistics of the population, and do not recognize any cause but pulmonary tuberculosis. As it has been said, however, it is a mistake to say that the mortality from tuberculosis has dropped from 410 to 343 for each hundred thousand inhabitants, because the thousands of deaths caused by the localization of tuberculosis in organs other than the chest are forgotten. Furthermore, mortality from tuberculosis in the suburbs of Paris, which are growing to immense proportions, is not mentioned. According to a table made recently by Dr. A. Fillassier of the statistical bureau of Paris, which concerns the morbidity of the communes of the Department of the Seine, it is seen that the number of deaths due to tuberculosis has grown steadily from 1896 to 1911. This reinforcement from the suburbs makes up in a great measure for the falling off in the tuberculosis death-rate of Paris proper.

This undiminished mortality from tuberculosis has still another cause. Since 1880, in spite of the growth of the population of Paris, the general mortality has been lessened by 10,000. The health of Paris has therefore most fortunately improved: certain diseases are on the decline. But for each hundred deaths due to all causes, the proportion of those due to tuberculosis has steadily increased, having risen from 20 to 25 per cent.

The Next Meeting of Practicing Physicians

The program for this meeting, which will be held in Paris, May 27-29, will be given over to the study of the part which the medical body and the medical syndicates should play in the organization of social hygiene and the sanitary defense in France.

BERLIN LETTER

BERLIN, April 23, 1914.

Further Decrease in Deaths from Tuberculosis

According to the statement of the National Prussian Statistical Bureau, there was a further decrease in deaths from tuberculosis during the year 1913. In Prussia, during the year 1912, there were 59,911 deaths against 56,583 in 1913, showing a decrease of 3,328 deaths in 1913. The average death-rate per ten thousand, which in 1912 was 14.85, amounted to only 13.59 during the year 1913. Twenty years ago, the figures were twice as large.

Institute for Crippled Children in Munich

March 26 the new building of the National Institute for Crippled Children and the orthopedic clinic connected with this institute, the first national clinic of its kind in Germany, were formally opened in the presence of the king and queen of Bavaria. The king gave the institute a fund of $2,500 (10,000 marks) for free beds. The National Institute consists of a large central building and two side wings. Through the entrance one passes into a main hall, from which is reached the large dining-hall. Spacious corridors each side lead to the schoolrooms for boys and girls, the workrooms and workshops, such as the book-bindery, the tailor-shop and the shoe-shop. The gymnasium is connected with the latter by a corridor. On the second story of the main building there are offices, examination- and operating-rooms for the dentists and house physicians and a room for the drawing classes; in the wings are recreation-rooms, play-rooms, music-rooms and bedrooms. The separation of the sexes is carried out strictly. The third story contains besides the apartments for the director, dormitories, rooms for the laundry and the sick-rooms. Each dormitory is provided with an inspection-room, a wash-room and wardrobe. In the upper story, to be used for the enlargement of the institute, there will be placed at first only some reserve rooms, a sick-room and a room for former pupils. Comprehensive provision for the boilers and kitchen, besides the baths and the rooms for the servants, are made in the basement.

A roomy passageway in the first story leads from the National Institute to the orthopedic clinic. Here also the kitchen with its accessory rooms and the rooms for servants, as well as the workshops for the preparation of orthopedic apparatus, are placed in the lower story. From the arched entrance hall, the office and waiting-rooms as well as the numerous consultation- and examination-rooms are accessible. The operating-rooms, the special Roentgen-ray rooms and a patients' elevator, as well as the orthopedic gymnasium, lie in the transverse building adjoining on the south. The first and second stories of the clinic are chiefly occupied by rooms for patients in addition to a living-room for the assistant, an operating-room for septic cases, a dining-room for the nurses and two separate wards with five beds.

All the patients' rooms are provided with covered porches which face south or southeast. The number of beds for patients amounts at the outset to seventy, but they can be easily increased at any time by putting them closer together. The living-rooms for the nurses are in the upper story of the south building. From the connecting passage between the National Institute and the clinic there are entrances to the Roman Catholic and Protestant chapels.

The isolation and laundry building serves in common for the National Institute and the clinic. It contains in the basement scientific laboratories for animal experiments, disinfection apparatus and a room for generation of steam and hot water as well as an apparatus for softening the very hard water. On the ground floor and in the second story there are four isolation-rooms as well as a special steam laundry for each of the two institutions. The heating of the whole building is carried on in a common heating plant.

The Falling Birth-Rate in Bavaria

The claim frequently made with special emphasis by the press and members of parliament of the central party that the Roman Catholic population participate in the lamentable reduction in the birth-rate to a much less degree than the Protestants, finds a timely and interesting illustration in the official statistics for Bavaria for 1913, just published. In this connection, it must be remarked that Bavaria is 70 per cent. Roman Catholic and 28 per cent. Protestant, while Prussia is 36 per cent. Catholic and 62 per cent. Protestant, like the empire in general. Now there began in Bavaria as well as in Prussia, in 1887, a reduction in the birth-rate which has been especially marked since the year 1902. In Bavaria in the five-year period 1901-1905, there were 37 births as an annual average for 1,000 inhabitants; from 1906-1910, 34.1; 1911, 31.1, and in 1912, 30.7. In Prussia, according to the statistical year-book, there was from 1901-1905 an average annual birth-rate of 36; 1906 to 1910, 33.3, and 1911, 30.2. The number for 1912 is not contained in the year-book. The difference is not so great, amounting to only 3 per cent., and the curves run practically parallel. Whether the religious sect explains the slightly greater number of births in Bavaria seems very questionable when it is remembered that the Bavarian statistical bureau makes a further statement with regard to the proportion of births in the country. For every single district and for every city the average yearly birth-rate per thousand women of child-bearing age (from 16 to 50 years) is estimated. Very considerable regional differences are apparent. As in other countries, most cities are distinguished by their low fertility. Evidently, the birth-rate depends much more on the economic and social condition of the population than on its sectarian complexion.

The upgrowth, which is the term signifying the number of children who have reached the age of earning capacity, is the greatest in those districts in which the fertility stands especially high. The infant mortality which, in many parts of Bavaria, has reached a height which is observed nowhere else in the German Empire—as high as a third of the children born living die in the first year of life—causes such a destruction of new-born children that often districts with a much smaller fertility by rational care in bringing up their children raise many more than districts with a more marked fertility with poorer care. On the whole, a considerable reduction of infant mortality in Bavaria has been noticed during the last two years. At any rate, the death-rate of the entire population has sunk to a marked degree. In 1900 there were 26.6 deaths per thousand inhabitants; in 1912, only 18.5. All classes, particularly those in the productive years of life, have participated in this increase in the average duration of life. In this time of a falling birth-rate, this favorable preservation of vitality deserves especial attention.

Marriages

DONALD ANDREW FRASER, M.D., San Francisco, to Miss Beatrice N. Lux of San Jose, Cal., at San Francisco, April 22.

DANIEL PHILIP MACGUIRE, M.D., West New Brighton, S. I., N. Y., to Miss Beatrice Butler of New York City, April 22.

ALEXANDER SANDS ROCHESTER, M.D., Chicago, to Miss Harriet Morris Carnahan of Columbus, Ohio, April 18.

HARRY LANGDON ROCKWOOD, M.D., Warrensville, Ohio, to Miss Lou Catherine May of Brilliant, Ohio, April 22.

ALFRED MELCHIOR LETZERICH, M.D., Harlingen, Tex., to Miss Myrtle Laas of Yorktown, Tex., April 23.

DAVID A. CAMPBELL, M.D., Tampa, Fla., to Miss Florence Springer of Indianapolis, at Tampa, April 23.

FREDERICK JOHN CULLEN, M.D., to Miss Ida Gibson, both of Tacoma, Wash., in Seattle, Wash., April 13.

FRANCIS EUGENE MURPHY, M.D., Aitkin, Minn., to Miss Romelle Comrie of Winona, Minn., April 19.

EDGAR IRVING LEAVITT, M.D., San Francisco, Cal., to Miss Laura Arnot of Placerville, Cal., April 19.

METULLUS ROWAN BARCLAY, M.D., to Miss Elsie Genevieve Kohlasch, both of Chicago, recently.

FRANK BURTON VON WORMER, M.D., Alton, Ill., to Miss Stella Cobb of River Forest, Ill., April 22.

OTHO LEE MONROE, M.D., New York, N. Y., to Miss Anna Marshall of McLeansboro, Ill., April 22.

LLOYD HUNTER MILLS, M.D., to Miss Mary Richardson, both of Los Angeles, Cal., recently.

GORDON A. LILLIE, M.D., Batson, Tex., to Miss Bess Vandervoort of Pawnee, Okla., April 15.

ELVIN WILLIAM KEITH, M.D., to Miss Helen Dougherty, both of Pottsville, Pa., April 17.

FRANCIS W. SINKLER, M.D., to Miss Mildred Scott Pearce, both of Philadelphia, April 14.

RALPH S. JIROCH, M.D., to Miss Clara Davis, both of Saginaw, Mich., April 18.

Deaths

Daniel Mitchell Appel, M.D. Colonel Medical Corps, U. S. Army; a Fellow of the American Medical Association; was found dead at his home in Honolulu, Hawaii, April 23, from organic heart disease, aged 59.

He was graduated from Jefferson Medical College in 1875, and a year later entered the Army as assistant surgeon. At the outbreak of the Spanish-American War he was made chief surgeon of the First Division, Seventh Army Corps, and later was on duty at Chickamauga Park, Ga., and Fortress Monroe, Va. In 1899 he was transferred to Savannah, Ga., and three years later was placed in command of the Army General Hospital, Fort Bayard, N. Mex. A year later he was ordered to the Philippine Islands, where he served as surgeon at Camp Jossman, and later as medical-supply officer at Manila. On his return to the United States in 1906, he was placed in charge of the medical-supply depot at San Francisco. In 1908 he was promoted to colonel, medical corps, and three years later was made chief surgeon, department of the gulf. Early in 1913 he came to Chicago as chief surgeon of the central division, and a few months later was transferred to a similar position in the department of Hawaii, with headquarters at Honolulu.

Richard Alexander Urquhart, M.D. University of Virginia, Charlottesville, 1894; a Fellow of the American Medical Association; assistant pediatrician to Johns Hopkins Hospital, Baltimore; attending physician to the Union Protestant Infirmary; Church Home and Infirmary; Baltimore Orphan Asylum, James Kernan Hospital and Industrial Home for Crippled Children; one of the medical inspectors of public schools of Baltimore; instructor in pediatrics in Johns Hopkins Medical School; died at his home in Baltimore, April 22, from heart disease, aged 42.

Adolph Abraham Margolies, M.D. University of Koenigsberg, Germany, 1879; Eclectic Medical College of the City of New York, 1883; of Brooklyn; died in the German Hospital, New York City, April 20, from carcinoma of the stomach, aged 66.

Samuel Otway Lewis Potter, M.D. Homeopathic Medical College of Missouri, St. Louis, 1878; Jefferson Medical College, 1882; a veteran of the Civil War; acting assistant surgeon, U. S. Army, in 1882-83; major and brigade surgeon, U. S. V., from 1898 to 1902, with service in the Philippine Islands; professor of practice of medicine in Cooper Medical College, San Francisco, from 1886 to 1893; formerly president of the College of Physicians and Surgeons, San Francisco; author of a handbook of materia medica, pharmacy and therapeutics which has gone through many editions, and of a number of other books and articles on therapeutics and engineering; died in St. Luke's Hospital, San Francisco, April 21, aged 67.

Charles Pickering Putnam, M.D. Harvard Medical School, 1869; a Fellow of the American Medical Association and American Pediatric Society of which he was president in 1908; medical director of the Massachusetts Infant Asylum; at one time chairman of the board of children's institutions department of the city of Boston; president of the Boston Associated Charities; eminent as a specialist on diseases of children; from 1875 to 1879 lecturer and instructor on diseases of children in Harvard Medical School; one of the organizers of the Boston Association for the Relief and Control of Tuberculosis; died at his home in Boston, April 22, aged 69.

Charles Byron Nichols, M.D. Dartmouth Medical School, Hanover, N. H., 1872; a Fellow of the American Medical Association; formerly president of the Angelus Hospital Association, Los Angeles; professor of surgery and president of the College of Physicians and Surgeons, Los Angeles; president of the Los Angeles Academy of Medicine, and Clinical and Pathological Society of Los Angeles; a veteran of the Civil War; and a surgeon of volunteers in the Spanish-American War, with service in the Philippine Islands for three years; died at his home in Los Angeles, April 16, aged 66.

Oliver L. Halbert, M.D. University of Louisville, Ky., 1876; a member of the State Medical Association of Tex.; once president of the McLennan County Medical Society; formerly president of the board of directors of the Y. M. C. A. of Waco; for many years a trustee of Baylor University; died at his home in Waco, April 22, aged 64. At a special meeting of the McLennan County Medical Society, resolutions were adopted relative to the death of Dr. Halbert.

William F. Burnett, M.D. Louisville Medical College, 1902; a Fellow of the American Medical Association; formerly surgeon to the Eureka (Nev.) Hospital and Richmond-Eureka Mining Company; and later a practitioner of Santa Rosa, Cal.; died at the Hotel Dieu, El Paso, Tex., February 27, as the result of injuries to the fourth cervical vertebra, caused by a fall four days before at Bowie, Ariz., aged 49.

William Walker Brackett, M.D. Jefferson Medical College, 1896; a Fellow of the American Medical Association; health officer of New Britain from 1906 to 1909; medical inspector of schools of New Britain since 1911; attending surgeon to New Britain General Hospital; died at his home, April 21, from septicemia due to an accidental infection, aged 42.

Frank Kelly Roarke, M.D. Albany (N. Y.) Medical College, 1891; a Fellow of the American Medical Association, and a specialist on diseases of the nose and throat; laryngologist to the Samaritan Hospital and consulting laryngologist to the Maternity Hospital of Troy, N. Y.; died at his home in that city, April 19, aged 44.

Morris Stroud French, M.D. Jefferson Medical College, 1876; formerly superintendent of the Allegheny County Insane Hospital, Woodville, Pa.; died in his room in Philadelphia, April 26, from the effects of a gunshot wound of the head, believed to have been self-inflicted with suicidal intent, aged 65.

Francis Alvin Weir, M.D. Rush Medical College, 1879; a Fellow of the American Medical Association; for many years a practitioner of Jesup, Ia., but for eighteen years a resident of Pasadena; died at his home in that city, April 16, from pernicious anemia, aged 75.

Orlando P. Sala, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1868; for forty-five years a practitioner of Bloomington, Wis.; a veteran of the Civil War; died in Mercy Hospital, Davenport, Ia., April 24, aged 68.

A. M. Covert, M.D. Starling Medical College, Columbus, Ohio, 1879; for many years a practitioner of Antioch, Ohio; died at his home in South Zanesville, Ohio, April 19, from pernicious anemia, aged 61.

Hugh Watt, M.D. Victoria College, Cobourg, Ont., 1880; University of Toronto, Ont., 1890; for several years editor and proprietor of the Meaford *Monitor;* and later in charge of an Indian Reservation at Fort Steele, B. C.; died at his home in Elko, B. C., March 23.

Edward W. Blake, M.D. Missouri Medical College, St. Louis, 1897; a member of the Oklahoma State Medical Association; a specialist in diseases of the eye, ear nose and throat of Tahlequah, Okla.; died at his home, March 13, from heart disease, aged 44.

Rebecca Rogers George, M.D. University of Michigan Homeopathic College, Ann Arbor, 1891; for several years lecturer on special physiology and hygiene at the Indiana State University, Bloomington; died at her home in Indianapolis, April 17, aged 51.

Royal Lewis Cleaves, M.D. Harvard Medical School, 1869; a Fellow of the American Medical Association; for forty-four years a practitioner of Cherokee, Ia.; a veteran of the Civil War; died at his home in Cherokee, April 16, from heart disease, aged 69.

Joseph Taylor Shepler, M.D. Bellevue Hospital Medical College, 1874; for two years coroner of Fayette County, Pa., and later local surgeon for the Pennsylvania System; died at his home in Uniontown, Pa., April 12, from cerebral hemorrhage, aged 67.

Blake A. D. Harwood (license, New Hampshire, 1897), of Exeter, N. H.; a member of the New Hampshire Medical Society; surgeon in the British service during the Boer War; died at his home in Exeter, N. H., April 12, from heart disease, aged 61.

Warren R. Woodward, M.D. Medical College of Ohio, Cincinnati, 1866; a member of the Ohio State Medical Association and one of the best-known practitioners of Hamilton County, Ohio; died at his home in South Milford, April 16, aged 70.

Eugene C. McMeel, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1880; a member of the Iowa State Medical Society; recently appointed postmaster of Delmar, Ia.; died at his home in that place, April 22, from pneumonia, aged 55.

William Triplett Harris, M.D. Medical College of Virginia, Richmond, 1907; a member of the Medical Society of Virginia; at one time a member of the staff of the Memorial Hospital, Richmond; died at his home in Richmond recently, aged 39.

Peter Beaugrand, M.D. Medical College of Ohio, Cincinnati, 1845; surgeon of the One Hundred and Sixty-Ninth Ohio Volunteer Infantry during the Civil War; died at his home in Fremont, Ohio, April 12, from senile debility, aged 99.

Mark Andrews, M.D. New Orleans School of Medicine, 1858; for forty years a practitioner of Waterproof, La.; surgeon in the confederate service during the Civil War; died at his home in San Antonio, Tex., about April 21, aged 83.

Charles Joseph Spratt, M.D. Bellevue Hospital Medical College, 1869; a member of the Minnesota State Medical Association; an eye and ear specialist of Minneapolis; died in Asbury Hospital in that city, April 12, aged 65.

Julius Caesar Lauer, M.D. University of Berlin, Germany, 1893; aged 55; died at his home in Long Island City, N. Y., April 20, from septicemia, believed to have been the result of a bite of a child suffering with diphtheria.

Pliny Penn Lester, M.D. Rush Medical College, 1903; of Walsenburg, Colo.; aged 41; while dressing the wounds of a militiaman shot during the strike at the Forbes Camp near Walsenburg, was shot and killed.

Edmond Lalonde, M.D. Laval University, Montreal, Que., 1899; a Fellow of the American Medical Association; aged 38; was found dead in his home in St. Paul, April 22, from accidental gas asphyxiation.

Sebastian A. Allgaier, M.D. Medical College of Ohio, Cincinnati, 1900; died in his apartment in Cincinnati, April 19, from the effects of poison, self-administered, it is believed with suicidal intent, aged 39.

James W. Murphy, M.D. Ohio Medical University, Columbus, 1895; a member of the Ohio State Medical Association; died at his home in Eagle Mills, Ohio, April 16, from tuberculosis, aged 43.

Thomas S. White, M.D. American Medical College, eclectic, St. Louis, 1879; a veteran of the Civil War, died at his home in Kansas City, April 20, from nephritis, aged 82.

Ferdinand O. Kauffmann, M.D. Missouri Medical College, St. Louis, 1874; at one time physician in charge of the Quarantine Hospital, St. Louis; died at his home in that city, April 14, from heart disease, aged 67.

Charles Hunt Porter, M.D. College of Physicians and Surgeons, New York City, 1908; a Fellow of the American Medical Association; formerly a clergyman; died at his home in Taunton, Mass., April 17, aged 43.

Everett B. Utley, M.D. College of Physicians and Surgeons, Baltimore, 1883; a member of the South Carolina Medical Association; died at his home in Marion, S. C., recently, from pneumonia, aged 53.

William Edward Scollard, M.D. Rush Medical College, 1882; a Fellow of the American Medical Association; who was adjudged insane in November last; died at his home in Milwaukee, Wis., April 19, aged 62.

Morris Wolf, M.D. Eclectic Medical College of the City of New York, 1893; formerly health officer of Yonkers, N. Y.; died in St. Joseph's Hospital in that city, April 18, from disease of the intestine, aged 44.

William H. Seip, M.D. Jefferson Medical College, 1859; a member of the Medical Society of the State of Pennsylvania; died at his home in Bath, Pa., April 11, from cerebral hemorrhage, aged 76.

Charles Higgs Franklin, M.D. Tulane University, New Orleans, 1866; a member of the Medical Association of the State of Alabama; died at his home in Union Springs, Ala., March 19, aged 75.

John Aloysius Healy, M.D. Tufts College Medical School, Boston, Mass., 1896; a member of the Minnesota State Medical Association; died at his home in Spicer, Minn., April 13, aged 43.

William Bike Stiver, M.D. Rush Medical College, 1878; a member of the Illinois State Medical Society; of Freeport, Ill.; died in that city, April 18, from cerebral hemorrhage, aged 63.

Nelson Obetz, M.D. Starling Medical College, Columbus, Ohio, 1879; for thirty-four years a practitioner of Columbus; died at his home in that city, April 13, from arteriosclerosis, aged 61.

Vincent A. Baker, M.D. Syracuse (N. Y.) Medical College, 1854; Eclectic Medical College of the City of New York, 1873; died at his home in Adrian, Mich, March 20, aged 82.

Harrie B. Howell, M.D. University of Buffalo, N. Y., 1890; a member of the Medical Society of the State of New York; died at his home in Rochester, N.Y., February 6, aged 50.

Earl Weaks, M.D. University of Louisville, Ky., 1909; formerly of Gallup and Silver City, N. Mex.; died at his home in Paducah, Ky., March 20, aged 30.

Carl Wirth, M.D. Northwestern University Medical School, Chicago, 1873; died at his home in St. Paul, Minn., April 17, from angina pectoris, aged 70.

Charles L. Randell, M.D. College of Physicians and Surgeons, Baltimore, 1889; of Portland, Me.; died suddenly in Tampa, Fla., March 22, aged 55.

Julia Ann Marshall, M.D. Boston University School of Medicine, 1877; of Norfolk Downs, Mass.; died in Boston, March 26, aged 72.

Charles M. Mahaffey, M.D. Western Reserve University, Cleveland, 1877; died at his home in Mount Vernon, Ohio, April 10, aged 59.

Henry W. Shaffer, M.D. Cleveland University of Medicine and Surgery, 1897; died at his home in Tedrow, Ohio, April 7, aged 63.

Haschall P. Miller, M.D. Hahnemann Medical College, Chicago, 1887; died at his home in Norwalk, Wis., February 6, aged 74.

Miles W. Palmer, M.D. New York University, New York City, 1847; died at his home in New York City, April 10, aged 92.

James D. Foster (license, Kentucky, forty-nine years practice, 1893), died at his home in London, Ky., March 16, aged 92.

Charles W. Carrier, M.D. University of Buffalo, N. Y., 1862; died at his home in Troy, Pa., March 24, aged 73.

Herman Fritsch, M.D. Jefferson Medical College, 1870; died at his home in Philadelphia, April 16.

John Warren Walker, M.D. Rush Medical College, 1884, died at his home in Chicago, April 16.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

THE OKOLA LABORATORY

A Mail-Order Treatment for Weak Eyes Declared Fraudulent by the Postal Authorities

On Feb. 16, 1914, Postmaster-General Burleson, on the recommendation of Judge W. H. Lamar, assistant attorney-general, issued a fraud order against the Okola Laboratory (Inc.), Rochester, N. Y., on the grounds that the concern was "engaged in conducting a scheme for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises."

The Okola Laboratory commenced operations in 1911 and was incorporated in New York, March 25, 1912, by the following individuals:

Charles S. Clark
Katherine A. McCormick
Edwin J. McNamara

Clark is said to have been the chief promoter, and to have had associated with him in carrying on this fraud the following:

Thomas F. Adkin, Rochester, N. Y.
Dr. John L. Corish, New York, N. Y.
Dr. John S. Read, Rochester, N. Y.
Charles H. Phillips, London, England.

Many of The Journal readers will recognize the name of Adkin as the man who has been connected with various fraudulent concerns, some of which have been put out of business by the federal authorities, others have gone out of existence, while some are still being operated. Thomas F. Adkin and E. Virgil Neal (alias X. LaMotte Sage) have for many years been engaged in the business of swindling the public through the instrumentality of the United States mails. They will probably continue to do so until the laws have become sufficiently flexible and public opinion has become sufficiently aroused to warrant some more drastic punishment than the mere issuance of a post-office fraud order.

The general scheme of the Okola Laboratory was to advertise that Dr. John L. Corish, "an able New York physician, and "an eminent medical man," had discovered a marvelous treatment for affections of the eyes by which those who were wearing glasses, or who should have been wearing glasses, could do without them. The treatment was claimed to have originated in Germany (a favorite fiction in many lines of medical fraud) and was represented to cure eye-strain, inflammation of the retina, cataract, diseases of the optic nerve, and many other conditions equally serious.

The so-called Okola Method consisted of three parts: "Okola," Okolizer" and "Okolator." "Okola" was the name of some tablets that were sent to those who purchased the "treatment." These were analyzed by the government chemists and were found to consist, essentially, of:

Baking soda	Boric acid

The directions were to dissolve the tablets in water and apply the solution to the eye by means of an eye-cup. The "Okolator" was a metal inhaler containing cotton moistened with a volatile liquid found by the government chemists to have the following ingredients:

Oil of mustard	Oil of eucalyptus
Carbolic acid	Oil of sassafras
Iodin	Tincture of benzoin
Menthol	Alcohol
Camphor	Petroleum oil

The "Okolator" was to be applied to the nose and the fumes from this odoriferous tube inhaled. The 'Okolizers" were simply printed cards on which directions were given for rubbing the eyes, etc. The element of "mental suggestion" was not lacking, as some of the reading matter on these cards indicates:

"I am using Okola and the Okolator, also following the simple rules of the Okolizers, as I am convinced that there will be a notable and lasting benefit to my eyes by faithful adherence to the Okola Method for six months."

The absurdity and fraudulence of selling a simple eye-wash and an evil-smelling inhalant mixture for the cure of cataract, retinitis, glaucoma, astigmatism, etc., is evident. But this fraud was carried on for nearly two years and is said to have swindled the public out of $100,000 a year.

The Okola Laboratory advertisements featured a "free book" which was declared to have been written by Dr. John L. Corish. When the fraud was investigated by the postal authorities, it was found that the book was not written by Corish, that Corish had had practically no experience in treating diseases of the eye, and was, in fact, at the time experimenting with a "cure" for baldness. Corish's name appears in connection with the Woods fraudulent cure for alcoholism, exposed in The Journal some time ago, he having "indorsed" this swindle. Needless to say, Corish is not an "eminent New York physician"—he is but a comparatively obscure member of the *genus* Quack. In this connection it should be noted that Dr. John S. Read, the "director" of the Okola Laboratory, was one of the Rochester physicians who gave sworn testimony for the benefit of that hoary fraud, "Duffy's Malt Whiskey," which he deposed had been "used and prescribed by him for a number of years."

As in all mail-order medical frauds, while the public was led to believe that individual attention would be given to all letters sent to the Okola Laboratory, the facts were that the correspondence was almost entirely handled by clerks and that "form letters" were used in practically all instances. This, too, in spite of the fact that practically all the letters which were sent out by the Okola Laboratory were signed, "John S. Read, M.D."

After reviewing all of the facts brought out by the investigation of the postal authorities, the assistant attorney-general reported to the postmaster-general:

"I find that this is a scheme for obtaining money through the mails by means of false and fraudulent pretenses, representations, and promises, in violation of Sections 3929 and 4041 of the Revised Statutes, as amended; and therefore recommend that a fraud order be issued against the Okola Laboratory, Inc."

As previously noted, a fraud order was issued.

The preceding gives in brief the case of the Okola Laboratory fraud. More complete details taken from memorandum of Assistant Attorney-General Lamar to the postmaster-general will be given in a pamphlet reprint of this matter soon to be issued.[1]

"BELL-ANS," FORMERY "PA-PAY-ANS, BELL"

For a good many years Bell & Co. have put on the market under the name "Pa-pay-ans, Bell," a tablet consisting essentially of charcoal, sodium-bicarbonate, and ginger, flavored with oil of wintergreen. Of course, the soda, ginger, and charcoal were not featured by the company. The advertising point was the alleged presence of papain, said by Bell & Co. to be the "digestive principle obtained by our own exclusive process from the fruit of the *Carica papaya*." The attempt on the part of the Council on Pharmacy and Chemistry to determine the digestive power of Pa-pay-ans, Bell, resulted negatively, thus verifying results reported by other chemists.

Reading some of the "literature" on "Pa-pay-ans, Bell," might, if it were believed, lead one to think that with a bottle of this preparation on hand the balance of the physicians' therapeutic armamentarium could be thrown into the discard. Peritonitis, cholera morbus, alcoholism, sea-sickness, vertigo, dyspepsia, flatulence, and the vomiting of pregnancy are some of the many conditions for which Pa-pay-ans, Bell, have been recommended.

1. "The Okola Laboratory," 4 cents, postpaid.

Within the past few weeks physicians have been notified that the name of "Pa-pay-ans, Bell," has been changed to "Bell-ans." The reason for the change, according to the company, is that the new name is "shorter, pleasanter sounding, and better." As the most valuable asset of a "patent medicine" company is the name of its product, it is hardly likely that the name of Pa-pay-ans, Bell, would have been changed for purely euphonious reasons. As previous analyses indicate that there is not, and probably never has been, any appreciable amount of papain in the product, and as the older name, "Pa-pay-ans," carries with it the impression that papain is the essential drug, a more rational reason for the change of name should be sought. There is little doubt that this might be found in the federal Food and Drugs Act, especially that part which refers to misbranding. Bell & Co. are changing a misleading name into a meaningless one.

What physicians think of Bell & Company's method may be gleaned from the letter which follows. It is a copy of letter recently written to the concern:

Bell & Co., Orange, New Jersey.

Gentlemen: I acknowledge the receipt of your announcement of the change in name of your product from "Pa-pay-ans Bell" to "Bell-ans."

While I do not wish to obtrude suggestions relative to your business policies, yet I venture the opinion that a name suggestive of the constituents of your tablets would be less vague. Thus "Bicarb-char" or "Soda-char", indicating that they are sodium bicarbonate and charcoal would be more in harmony with pharmaceutical nomenclature.

I would further suggest that your lavish distribution of blotters which contain your advertisement of the specific for all gastric ills, *viz.*, "Pa-pay-ans Bell," or after the new style, "Bell-ans," be limited to professional circles, and not made so obtrusive in post-offices, banks, etc.

The above suggestions are made with the conviction that you want to be considered entirely honest with the medical profession, of which I, personally, am not convinced, and that you would regret deeply the discovery on the part of the profession of your making it a convenient means of exploiting your wares. Fresh in the memory of us all, who more or less prescribed Antikamnia and Resinol, are the experiences with remedies which now are advertised as cure-alls or specifics which had their introduction through the profession.

Personally, I consider your methods as the last word in brazen effrontery, which the medical profession should resent.

OTIS O. BENSON, M.D., Tower, Minn.

Association News

THE ATLANTIC CITY SESSION

Announcement of American Medical Special Train

The American Medical special train is routed this year over the Michigan Central, "Niagara Falls Route," via Buffalo, and then via the Pennsylvania Railroad direct to Atlantic City. The special train (all-steel equipment) will leave Chicago, Sunday June 21, at 6:30 p. m. and will reach Atlantic City in time for dinner the following day.. This gives the opportunity on the return trip of taking advantage of stopover privileges at Philadelphia and at Buffalo, which will allow side trips from Philadelphia to New York and Boston, or to Baltimore and Washington; and from Buffalo to Niagara Falls, Toronto, the Thousand Islands, Alexandria Bay and other northern points. Further details will be announced next week.

J. RAWSON PENNINGTON, Chairman,
Committee on Transportation and Place of Session.

MEDICAL PROFESSION AND THE RED CROSS

Plan of Committee to Provide Physicians in all Communities to Cooperate in Times of Emergency

The following circular has been sent to the various component county medical societies of the country:

"To the Secretaries of the Several County Medical Societies:
"Dear Sirs:

"The undersigned have been constituted a committee by the President of the American Medical Association to cooperate with the American Red Cross, in the matter of medical work.

"In February, 1913, the following communication was addressed to you, but fearing it has miscarried, we here repeat our appeal in the hope that on account of the importance of the subject you will bring it to the attention of your society at the first possible opportunity.

"The committee feels that a great deal of substantial good will come to all communities by providing a body of representative physicians of approved qualifications to direct or participate in medical work carried on by the Red Cross in different localities in times of emergencies and to advise with the representatives of that society on questions of medical policy and procedure. Besides its activity in emergency relief work, the Red Cross is engaged in an educational campaign for the mitigation of human suffering and the saving of lives. So far it has extended this movement only to the teaching of prevention of accidents and first aid to the injured, but it is hoped in future that it shall include popular instruction in the prevention of disease. These medical committees are not in any way bound to this educational work of the Red Cross, but members of the committees who may be interested are invited to correspond with the First Aid Department of the Red Cross.

"In the opinion of this committee the plan may be properly considered under the following headings:

"1. OBJECT. Primarily this service is designed to meet local emergencies when conditons of disaster are such as to call for the intervention of the Red Cross. When exigencies come about in any community the Red Cross would be glad to feel that it might call on carefully selected physicians in that community to lend their aid in the medical work incident to the situation.

"2. ORGANIZATION. It is desired to have in every county a central committee of five physicians, two of whom shall be the president and secretary of the county medical society, *ex officio*. The president of the county medical society shall select the other three members, preferably from the list of councilors or of the executive committee. This committee should be designated the 'Committee on Red Cross Medical Work.' The names and residences of the members, immediately after organization, should be reported to the chairman of the American Medical Association committee. In case of disaster, requiring relief action by the Red Cross, these county committees will be called on to nominate qualified medical men in their respective counties for Red Cross service. The committees will also serve in an advisory medical capacity to the Red Cross in time of disaster and in other lines of Red Cross activity as indicated in a preceding paragraph.

"3. QUALIFICATIONS. The certification of physicians by county committees will be accepted as ample evidence of the physical, moral and professional qualifications of the gentlemen recommended for appointment. It may be pertinent to state that service in time of disaster may entail severe physical effort, and physical fitness of appointees to perform hard work is, therefore, important.

"4. COMPENSATION. In some instances the Red Cross may require the services of physicians at a distance from their places of residence and for varying periods. Under these conditions the Red Cross will be prepared to pay traveling expenses and a moderate honorarium to be agreed on between the physicians and the national director of the Red Cross.

"It will be obvious to you that the arrangement here proposed is primarily intended to provide for emergencies which may suddenly arise in any community or, on the other hand, may happily never occur. Thus it may be that the committee which we are inviting you to create may never be called into action, while, on the other hand, it may have occasion to perform a very great public service. Your cooperation in the completion of this plan at as early a date as convenient will be appreciated.

"Please address all communications bearing on the contents of this letter to the Chairman, Dr. George M. Kober, c/o The American Red Cross, 716 Union Trust Building, Washington, D. C.

"Yours respectfully,
GEORGE M. KOBER, M.D.,
"Chairman.
"WILLIAM J. L. LYSTER,
"Major, Medical Corps, U. S. Army.
"E. M. BLACKWELL,
Surgeon, U. S. Navy.

The present is an especially opportune time to bring this matter before the component societies.

Correspondence

Holmes, Not Semmelweis

To the Editor.—Anent the interesting letter of Dr. Simon Baruch (THE JOURNAL, May 2, 1914, p. 1420), in your last issue concerning the priority of Holmes over Semmelweis "in the discovery" of the contagiousness of puerperal fever, Dr. Holmes himself states that his essay was read before the Boston Society for Medical Improvement, and at the request of the society printed in the *New England Quarterly Journal of Medicine and Surgery* for April, 1843. According to Hirst of Philadelphia the observations of Semmelweis were made in the Vienna Hospital in 1846-1848, while another paper which attracted wide attention was from the pen of Sir James Y. Simpson on "The Analogy between Puerperal and Surgical Fevers," published in 1850. That the facts will establish the priority of Holmes over Semmelweis would seem to be without question.

It is contrary to facts, however, to consider Holmes as the discoverer, a claim which he never made and which his own words disprove by quotations from writers who recognized the truth as clearly as did he, but long before. Among them Dr. Gordon of Aberdeen, in a treatise published in 1795, said:

"I had evident proofs of its [puerperal fever's] infectious nature, and that the infection was as readily communicated as that of the small-pox or measles, and operated more speedily than any other infection with which I am acquainted.

"I had evident proofs that every person who had been with a patient in the puerperal fever became charged with an atmosphere of infection, which was communicated to every pregnant woman who happened to come within its sphere. This is not an assertion, but a fact, admitting of demonstration, as may be seen by a perusal of the foregoing table" [referring to a table of seventy-seven cases, in many of which the channel of propagation was evident].

"It is a disagreeable declaration for me to mention that I myself was the means of carrying the infection to a great number of women." After enumerating a number of instances in which the disease was conveyed by midwives and others to neighboring villages, he declares that "these facts fully prove that the cause of puerperal fever, of which I treat, was a specific contagion, or infection, altogether unconnected with a noxious constitution of the atmosphere.

"I arrived at that certainty in the matter that I could venture to foretell what woman would be affected with the disease, on hearing by what midwife they were to be delivered, or by what nurse they were to be attended, during their lying-in, and almost in every instance, my prediction was verified."

I need not take space to cite passages also from White, Armstrong, Gregson, Gooch, Ramsbotham and other, chiefly English, authorities on whose researches Dr. Holmes based his argument, as the entire paper should be read by those interested. What I want to bring out is that the great debt we owe to Oliver Wendell Holmes, in this connection, is *not* that he discovered the contagiousness of puerperal fever, for this he certainly did not do, but that he clearly saw the truth as established by others and with his wonderful power as a master of English prose presented it in his usual attractive and forcible manner.

WILLIAM W. ROOT, M.D., Slaterville, N. Y.

Priority in the Adoption of Higher Entrance Requirements

To the Editor.—My attention has recently been called to a letter under the above caption in THE JOURNAL, March 21, 1914, p. 951, which may cause some to think that, in a paper read at the last meeting of the Council on Medical Education, I sought in some way to claim priority for the University of Virginia in the matter of requiring a year of college work for admission to the medical course. In view of the wide publicity which THE JOURNAL has given to the dates when the various higher entrance requirements were adopted by various medical schools, such an assumption would be anything but flattering to my intelligence, not to mention honesty, and I hasten to plead not guilty

A reference to the paper in question, which was published in THE JOURNAL, March 14, 1914, p. 826, will be sufficient, I think, to show that the matter of priority was not in my mind, but that the date was stated simply as one among several facts which, taken together, might be thought to substantiate the opinion that, at the time and under the circumstances mentioned, the adoption of this requirement was "in a way an absurd thing."

R. H. WHITEHEAD, M.D., Charlottesville, Va.

Rubeola and Choroiditis

To the Editor:—Some years ago a child was brought to me who had suddenly developed partial blindness during an attack of rubeola. Ophthalmoscopic examination revealed choroiditis, which advanced to partial atrophy. This case caused me to investigate, and revealed the fact that but few cases of choroidal atrophy can be found which will not furnish a previous history of rubeola.

Swanzy states that rubeola may be the cause of purulent choroiditis, but there is scant if any reference to it in the text-books. In one case an intelligent young woman was referred by me to an eminent oculist for an obscure tumor of the fundus following rubeola. This tumor disappeared to be followed by choroidal atrophy. I have found no drugs of any value—the treatment must be preventive.

C. DREW, M.D., Jacksonville, Fla.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SACCHARIN IN DIABETES

To the Editor:—Please tell me the objection to the use of saccharin in cases of diabetes in doses of 2 to 3 grains per day as a sweetening agent. I know that the use of this preparation has been prohibited in a commercial way. Do you know anything to take its place for use in diabetes?

R. J. HILL, M.D., Minneapolis.

ANSWER.—Benzosulphinid (saccharin) is an antiseptic and tends to hinder slightly the action of the digestive ferments. An excessive quantity of it may, therefore, impair digestion. In the moderate doses in which it is used for sweetening beverages of diabetics it is not liable to do harm. The prohibition applies to the use of this preparation in the sweetening of preserved foods. In amounts of over 0.3 gm. (5 grains) per day, it has been pronounced harmful by the government Referee Board of Chemists. Glycerin can be used for sweetening the food of diabetics and may properly be used as an alternative in place of saccharin.

LITERATURE ON DISEASE AND CRIME

To the Editor:—I am looking for information on defective physical conditions as the cause of crime, or physical defects as a cause of criminal and degenerate acts. Can you direct me to something not too voluminous?

G. H. VAN DYKE, M.D., Chicago.

ANSWER.—The following is a list of articles on this subject:

Talbot, E. S.: Stigmata of Degeneracy in the Aristocracy and Regicides, THE JOURNAL, Nov. 10, 1894, p. 710.

Talbot, E. S.: A Study of the Stigmata of Degeneracy among the American Criminal Youth, THE JOURNAL, April 9, 1898, p. 849.

Noble, C. P.: The Law of Degeneracy in Its Relation to Medicine, *New York Med. Jour.*, Dec. 24, 1910.

Lombroso, Cesare: Crime: Its Causes and Remedies, Boston, Little Brown & Co., $4.50.

Payse, F. M.: The Physical Causes of the Slighter Forms of Mental Defects in Children, *Lancet, London*, 1901, clxi, p. 11.

MacDonald, A.: Physical Stigmata of Degeneration, *Med. Fortnightly*, July 25, 1907.

Hughes, M. R.: Some Anomalies of the Stigmata of Degeneracy, *Virginia Med. Semi-Month.*, July 24, 1908.

Noble, C. P.: Hereditary Hypoplasia in Man Due to Degeneracy, THE JOURNAL, Feb. 13, 1909, p. 552.

Fry, D. R.: Pathologic Condition of the Nose, Throat and Ears as Etiologic Factors in Degeneracy, *Ohio State Med. Jour.*, September, 1910.

Hughes, M. R.: Recurrent Insanity and the Stigmata of Degeneracy, *Med. Fortnightly*, November, 1910.

Anderson, C. H.: Are Criminals Insane Individuals? *Illinois Med. Jour.*, April, 1914.
Bowers, P. E.: Constitutional Immorality, *Illinois Med. Jour.*, April, 1914.
Sleyster, R.: Some Data Gathered in a Study of 269 Murderers, *Illinois Med. Jour.*, April, 1914.
Hill, G. M.: Ways and Means of Preventing Physical, Mental and Moral Degeneracy, *Illinois Med. Jour.*, April, 1914.
Kohler, F.: Psychopathologie der Tuberkulose unter ihre kriminelle Bedeutung, *Ztschr. f. Tuberk.*, 1909-1910, xv, 31.
Appleton, H. L.: Crime, a Disease, with some Suggestions for its Cure, *South. Med. and Surg.*, September, 1905.
Vento, R. P.: Medical Examination of Criminals, *Rev. de Med. y Cirurg.*, ix, No. 6.
Ashmead, A. S.: Syphilis in Relation to Crime, *Jour. Cutan. Dis.*, 1906, xxiv, 571.
Ashmead, A. S.: Suppositions of Relationship of Crime with Syphilis, *Am. Jour. Dermat. and Gen.-Urin. Dis.*, 1908, xii, 384.
Ravogli, A.: Syphilis in Relation to Crime, *Ohio Med. Jour.*, 1906-1907, ii, 68.
Bowers, P. E.: Causes of Crime, *New York Med. Jour.*, July 19, 1913.
Sneve, H.: Influence of Parental Diseases, Habits and Heredity on Juvenile Crime, *Bull. Am. Acad. Med.*, October, 1913.
The Criminal Class and the So-Called Criminal Type, editorial, THE JOURNAL, Jan. 21, 1911, p. 201.
The Pathogeny of Crime, editorial, THE JOURNAL, May 18, 1907, p. 1708.

STATES WITH WHICH VIRGINIA RECIPROCATES

To the Editor:—Please tell me with what states Virginia reciprocates.

E. H. T.

ANSWER.—Virginia has reciprocated since June, 1904, with Delaware, District of Columbia, Georgia, Indiana, Maryland, Michigan, Nebraska, Texas and Wisconsin; since June, 1901, with Kentucky, Minnesota, Missouri, New Hampshire and West Virginia; with Iowa and Maine since December, 1907; with Wyoming since June, 1908; with Louisiana since December, 1908; with Arkansas, North Carolina and Vermont since June, 1910, and with Tennessee since 1911.

LITERATURE ON STAMMERING

To the Editor:—I should like to secure the best and most reliable information concerning the treatment of stammering.

FOREST A. CARPENTER, M.D., Statesville, N. C.

ANSWER: The following is a list of articles on this subject:

Bluemel, C. S.: Stammering and Cognate Defects of Speech, Vol. I, The Psychology of Stammering, Vol. II, Contemporaneous Systems of Treating Stammering, Their Possibilities and Limitations, New York, G. E. Stechert & Co., 1913, $5.
Leary, T. G.: Treatment of Stammering with Special Relation to Respiratory Exercises, *Intercolonial Med. Jour. Australasia*, November, 1908.
McCready, E. B.: Stuttering in Schoolchildren: Its Prevalence and Treatment, *St. Louis Med. Rev.*, August, 1909; abstr., THE JOURNAL, Sept. 25, 1909, p. 1061.
Makuen, G. H.: Brief History of the Treatment of Stammering with some Suggestions as to Modern Methods, THE JOURNAL, Nov. 6, 1909, p. 1590.
Gutzmann, H.: Treatment of Stuttering, *Therap. Monatsh.*, 1909, No. 10; abstr., THE JOURNAL, Nov. 20, 1909, p. 1786.
McCready, E. B.: Congenital Word Blindness as a Cause of Backwardness in Children. A Case Associated with Stuttering, *Pennsylvania Med. Jour.*, January, 1910; abstr., THE JOURNAL, March 5, 1910, p. 818.
Kenyon, E. L.: Can Stammering be Treated Successfully through Agency of Public School? THE JOURNAL, June 4, 1910, p. 1859.
McCready, E. B.: Relation of Stuttering to Amusia, THE JOURNAL, July 16, 1910, p. 208.
Scripture, E. W: Stuttering, *Arch. Pediat.*, June, 1910.
Makuen, G. H.: Treatment of Stammering, THE JOURNAL, Sept. 3, 1910, p. 853.
Langwill, H. G.: Stammering and Its Treatment, *Practitioner*, London, October, 1910.
Aronsohn, O.: Stammering, *Berl. klin. Wchnschr.*, Jan. 23, 1911; abstr., THE JOURNAL, March 4, 1913, p. 703.
Leary, G.: Treatment of Stammering, *Australian Med. Jour.*, Nov. 25, 1912.
Cadwallader, B.: Treatment of Stuttering and Stammering and Voice Defects through Science and Art of Speech and Singing, *Cleveland Med. Jour.*, December, 1912.
McBeath, H. F.: Correction of Impediments of Speech in Our Public Schools, THE JOURNAL, Nov. 1, 1913, p. 1610.

ANTIPLAGUE SERUM

To the Editor:—Please give me some information as to value of the prophylactic serum or vaccine in bubonic plague. Also state what firms will supply the serum or vaccine.

CHARLES P. HARWOOD, M.D., Carrollton, Ky.

ANSWER.—Several forms of antiplague serum have been recommended for both prophylaxis and treatment, the Yersin-Roux serum being the most important. Vaccination by Haffkine's vaccine is also recommended. A vaccine containing killed plague bacilli is marketed in this country by H. K. Mulford Company. See N. N. R., 1914, page 249.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POST-GRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

DIFFERENT VIEWS ON CONTAGIOUS-DISEASE PREVENTION

Two physicians and a lay editor have recently expressed opinions concerning different phases of the contagious-disease problem which seem to be particularly interesting. Dr. A. J. Chesley, head of the Epidemiologic Division of the State Board of Health of Minnesota, in a recent report, cited the cases of three traveling men who, while touring the state, had become infected with small-pox, and said it would never be known how many cases had resulted from exposure to these men. Ninety-two per cent. of the public money spent in 1913 on the isolation of small-pox cases, he asserts, was wasted, because that percentage of the persons who had small-pox had never been vaccinated. He believed that there was no fairness or common sense in maintaining isolation hospitals for the care of persons who carelessly or deliberately chose to permit themselves to remain susceptible to small-pox by neglecting vaccination. This attitude, though apparently correct, is not likely to be adopted universally until public welfare is placed above what the individual is pleased to call "personal liberty."

WHO IS RESPONSIBLE?

A physician of La Crosse, as reported in the Racine (Wis.) *Times*, recognizing that small-pox and the other contagious diseases constitute a condition and not a theory, against which the public must be protected and for which it must pay, suggests that families obliged to submit to quarantine should be compensated by the state for their time and enforced idleness. This opinion is based on the ground that the quarantine is not for the protection of the individual in whose home the disease exists, but is for the general protection of society. Therefore, society should pay, notwithstanding, it may be added, that probably the sick individual and the family, in the case of small-pox, may have neglected such a prudent measure as vaccination, and may thus have been responsible for the waste of public funds and the loss of his time caused by the quarantine.

HEALTH CONDITIONS OF THE NEGRO

The editor of the Houston (Tex.) *Post* calls attention to another phase of the contagious-disease problem in deploring the presence of an unusual number of small-pox cases, chiefly among the colored population of a number of the cities of his state. The editor's conclusions apply, not to small-pox particularly, but to general sanitary and living conditions among the poor and colored fraction. This class contributes more or less directly, he believes, to all forms of disease and ill health. His paper has often endeavored to impress on the minds of the public that the white people cannot afford to ignore living conditions among the negroes. Disregarding philanthropic conditions entirely, the editor says, we must see that the lives and health of the whites depend largely on the sanitary conditions in localities inhabited for the most part by negroes, who are compelled to live amid conditions that foster all sorts of communicable diseases, which the negroes in the capacity of laborers and servants may and doubtless do communicate to employers and their families. It is said that not only is the high death-rate among the negroes in the Southern cities a reproach to the white people and white governments, but also the conditions responsible for it constitute a menace to the health of the white people themselves. The wider application of this thought and the remedy are obvious. The comments here presented call attention to problems which touch the people practically and affect them directly. The prevention of infectious diseases is the greatest problem with which public health authorities have to deal.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 12. Sec., Dr. W. S. Stewart, Suite 404 Citizens Bk. Bldg., Pine Bluff. Homeopathic: Little Rock, May 12. Sec., Dr. I. J. Brooks, 219 East 10th St., Little Rock. Eclectic: Little Rock, May 12. Sec., Dr. C. E. Laws, Ft. Smith.

CALIFORNIA: Los Angeles, June 16. Sec., Dr. C. B. Pinkham, 135 Stockton St., San Francisco.

DELAWARE: Dover and Wilmington, June 16-18. Sec., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

FLORIDA: Palatka, June 17-18. Sec., Dr. E. W. Warren, Palatka.

GEORGIA: Atlanta and Augusta, June 3. Sec., Dr. C. T. Nolan, Marietta.

ILLINOIS: Coliseum Annex, Chicago, May 12-14. Sec., Mr. Amos Sawyer, Springfield.

IOWA: Iowa City, June 11-13. Sec., Dr. Guilford H. Sumner, State House, Des Moines.

KANSAS: Kansas City, June 9-12. Sec., Dr. H. A. Dykes, Lebanon.

KENTUCKY: Louisville, June 3-5. Sec., Dr. A. T. McCormack, Bowling Green.

LOUISIANA: New Orleans, June 4-6. Sec., Dr. E. L. Leckert, Macheca Bldg., New Orleans. Homeopathic Board: New Orleans, May 4. Sec., Dr. Edward Harper, 702 Macheca Bldg., New Orleans.

MARYLAND: Baltimore, June 15. Regular Board: Sec., Dr. J. McP. Scott, Hagerstown. Homeopathic: Baltimore, June 15. Sec., Dr. O. N. Duvall, 1817 N. Fulton Ave., Baltimore.

MASSACHUSETTS: Boston, May 12-14. Sec., Dr. Walter P. Bowers, Room 159, State House, Boston.

MICHIGAN: Ann Arbor, June 9. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MISSISSIPPI: Jackson, June 16-17. Sec., Dr. E. H. Galloway, Jackson.

MISSOURI: St. Louis, June 15-17. Sec., Dr. J. A. B. Adcock, Jefferson City.

NEBRASKA: Lincoln, May 27. Sec., Dr. H. B. Cummins, Seward.

NEW JERSEY: Trenton, June 15-16. Sec., Dr. H. G. Norton, 429 E. State St., Trenton.

NEW YORK: May 19-22. Chief of Examinations Division, Mr. Harlan H. Horner, Department of Education, Albany.

NORTH CAROLINA: Raleigh, June 9. Sec., Dr. Benj. K. Hays, Oxford.

OHIO: Columbus, June 2-5. Sec., Dr. George H. Matson, State House, Columbus.

PENNSYLVANIA: Philadelphia, June 1-3. Sec., Mr. Nathan C. Schaeffer, Harrisburg.

SOUTH CAROLINA: Columbia, June 9. Sec., Dr. A. Earle Boozer, 1802 Hampton Ave., Columbia.

Illinois January Report

Mr. Amos Sawyer, acting secretary of the Illinois State Board of Health, reports the written examination held at Chicago, Jan. 14-16, 1914. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 96, of whom 77 passed and 19 failed. The following colleges were represented:

College	Year Grad.	Total No. Examined
PASSED		
Bennett Med. College	(1911) (1912, 2) (1913, 11) (1914, 2)	16
Chicago College of M. & S.	(1911, 2) (1913, 10)	12
Hahnemann Med. Coll. & Hosp. of Chicago	(1912) (1913, 4)	5
Hering Medical College	(1913)	1
Illinois Medical College	(1910)	1
Jenner Medical College	(1913)	1
National Medical University, Chicago	(1903) (1904)	2
Northwestern University	(1907) (1913)	2
Rush Medical College	(1912) (1913, 4) (1914, 3)	8
University of Illinois	(1912) (1913, 4)	5
Drake University	(1909) (1912)	2
Johns Hopkins University	(1907) (1910) (1913)	3
Harvard Medical School	(1911) (1912)	2
Barnes Medical College	(1895) (1906) (1910)	3
Washington University	(1913)	1
University of Nebraska	(1913)	1
Jefferson Medical College	(1908)	1
University of Pennsylvania	(1897)	1
Meharry Medical College	(1904) (1910) (1913, 2)	4
Marquette University	(1913)	2
Royal University of Budapest	(1898)	1
Royal University of Vienna	(1895)	1
University of Geneva	(1911)	1
University of Naples	(1906)	1
FAILED		
Chicago College of Med. and Surg.	(1909) (1910) (1911, 2) (1912) (1913, 3)	8
Hahnemann Med. Coll. and Hosp. of Chicago	(1910) (1912)	2
Hering Medical College	(1913)	1
Jenner Medical College	(1913)	1
National Medical University, Chicago	(1903) (1909)	2
University of Illinois	(1912)	1
Central College of P. and S., Indianapolis	(1897)	1
Detroit College of Medicine	(1910)	1
American Medical College	(1912)	1
St. Louis College of Physicians and Surgeons	(1907)	1

Pennsylvania Reciprocity Report

Mr. N. C. Schaeffer, secretary of the Bureau of Medical Education and Licensure of Pennsylvania, reports that 20 candidates were granted licenses through reciprocity during the year 1913. The following colleges were represented:

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
University of Michigan, Coll. of M. & S.	(1904)	Michigan
Washington University	(1911)	Missouri
Ohio Medical University	(1907)	Ohio
Starling-Ohio Medical College	(1909)	Ohio; (1911) Ohio
Hahnemann Med. Coll. and Hosp., Philadelphia	(1896)	Indiana; (1899) West Virginia.
Jefferson Medical College	(1890)	Virginia; (1894) New Jersey; (1911) New Jersey.
University of Pennsylvania	(1894)	Delaware; (1899) New Jersey
University of Vermont	(1909)	Vermont; (1910) Vermont
University College of Med., Richmond	(1901)	West Virginia; (1907) Virginia; (1909) Virginia.
University of Virginia	(1905)	Virginia; (1908) West Virginia; (1911) Virginia.

Five candidates were granted licenses by oral examination. The following colleges were represented:

College	Year Grad.	Total No. Examined
PASSED		
Baltimore Medical College	(1898)	1
Baltimore University	(1900)	1
Columbia Univ., Coll. of P. & S.	(1894)	1
Queen's University, Medical Faculty	(1891)	1
University of Athens, Greece	(1906)	1

Book Notices

THE ORIGIN AND DEVELOPMENT OF THE LYMPHATIC SYSTEM. By Florence R. Sabin. Monographs of the Johns Hopkins Hospital Reports, New Series, No. 5. Paper. Price, $2. Pp. 94, with 19 illustrations. Baltimore: Johns Hopkins Press, 1913.

This monograph contains a discussion of existing theories, and reports further investigation which supports the author's previous important contributions on the origin of the lymphatic system. The older ideas of the lymphatic capillaries as extensions of simple interstitial spaces is now, and especially through the work of the author and others at Johns Hopkins, completely refuted. They are distinct tubes of endothelium, derived originally by budding from the veins, and they form closed canals as distinct from tissue-spaces as the blood capillaries themselves. In this article special stress is laid on the importance of endothelium as an active growing functional tissue. When it buds off the veins to form lymphatics it has the peculiar property of avoiding the blood-capillaries, hence forming the independent lymphatic network. These lymphatics invade the body, but apparently never enter the central nervous system, which remains a permanent non-lymphatic area. Lymph-glands are formed by development of lymphocytes around the lymph-vessels. Numerous illustrations add to the value of this important contribution to anatomy and embryology.

PRIMARY CARCINOMA OF THE LIVER. By M. C. Winternitz, M.D., Associate in Pathology, Johns Hopkins University. Monographs of the Johns Hopkins Hospital Report, New Series, No. 3. Paper. Price, 75 cents. Pp. 42. Baltimore: Johns Hopkins Press, 1913.

This monograph, which is a separate reprint of one of the Johns Hopkins Hospital reports, consists of a discussion of some of the literature and a report of one case observed by the author, two cases from Johns Hopkins studied by others, and two doubtful cases. One of the most important features of primary carcinoma of the liver, itself a rare tumor, is that in certain cases the neoplasm seems to grow by fresh transformation of liver-cells of adjacent territories into cancer-cells. If this is a correct interpretation of the processes observed, it signifies that substances or agents of some sort may diffuse from a malignant tumor into surrounding tissues, and there cause previously normal cells to take on the malignant character of growth, a phenomenon of the greatest significance in the problem of the etiology of cancer. Winternitz does not accept this view, but it will seem to some of the investigators who have studied this condition that his reasons for discrediting their interpretation are not conclusive.

Miscellany

Estimating Functional Capacity of Kidneys by Forced Elimination of Preformed Urea

The capacity of the kidneys for urea, chlorid and water excretion, according to G. W. McCaskey (*Med. Rec.*, New York, March 21, 1914), can be determined by surcharging the blood with the different substances in question and determining the rate of excretion of each, first over a brief period of time, while the blood remains heavily surcharged, and again over a longer period to determine the duration of time required to depurate the blood of a morbid excess.

The permeability of the kidneys for urea can be determined with great accuracy, in the absence of marked gastric stasis, by the ingestion of 30 gm. of urea, and furnishes a scientific basis for the regulation of the protein intake. The following technic is adopted by McCaskey: About 6 a. m. the bladder is emptied. Two hours later the urine is collected, and at the same time the patient is given 30 gm. of urea, dissolved in 4 or 5 ounces of water. Just before taking the urea, the patient drinks one-half of about 6 ounces of thin cereal gruel, taking the other half immediately after the urea. No other breakfast is eaten. The urine is then collected every two hours for twelve to twenty-four hours, the urea determined for each two-hour period, including the two hours preceding the ingestion of the urea, and from these data the curve of excretion is constructed.

The highest bihourly output seems to vary in health from 5 to 10 gm. The period during which the highest excretion occurs should be either the first or second two-hour period. If later, it may be due either to delayed absorption or to a slow response on the part of the kidneys. McCaskey states that the late, very wide fluctuations in the urea output found in some cases, after 30 gm. are taken, furnish pretty strong proof that the kidneys may for some reason fail to respond promptly to a large urea content of the blood, which certainly cannot rise and fall as the urea excretion sometimes does. Cases with an excretion much below 20 gm. should be regarded as of somewhat limited functional capacity for urea excretion, while one-half this lowest limit probably represents serious or even dangerous impairment of functions.

Getting It Out of the Doctors

In April, 1912, suit was brought against two noted surgeons of the German Hospital in New York City for leaving, after operation, two sponges in the plaintiff's abdomen. What actually happened was that the family physician later did a minor operation during which he used two pieces of absorbent cotton. It was those two pieces which the plaintiff assumed had been abiding in his abdomen since his first operation. Newspapers all over the country printed headlines telling how the fellow bunglers had sewed up those two sponges within their victim—first-class copy. When the case came up for trial, it was proved that one of these alleged miscreants had not even been present at the hospital operation; that absorbent cotton is never used in the German Hospital for abdominal sponges; that the family physician had positively assured the plaintiff the cotton he had used had never been inside the latter's abdomen, which he had, furthermore, never opened. The jury ended the suit of that G. P. (in medical parlance, grateful patient). Those surgeons have been harassed through two years and have had to engage counsel at loss to themselves, when their sole crime was having devoted their consideration and skill to a patient who was shown to have had not only one but four serious diseases—hernia, Bright's, diabetes and a heart lesion—and who, through their ministrations, nevertheless still lives. They were sued by that patient for ten thousand dollars. Medical history teems with accounts of such suits, almost always instituted by charity patients. Are there headlines telling of the issue of this suit? Hardly; where would be the news value?—*Harper's Weekly.*

Medicolegal

Operating on Nose of Person Stating That He Has a Cold—Basis for Expert Opinions

(Swadner vs. Schefcik (Minn.), 144 N. W. R. 958)

The Supreme Court of Minnesota, in affirming in this malpractice case an order granting a new trial but denying the defendant's motion for a judgment notwithstanding a verdict was rendered for the plaintiff, says that the only question before it on this appeal was whether there was evidence to take the case to the jury. The plaintiff consulted the defendant for catarrh, from which he had been for years a sufferer. He testified that he had a cold at the time, and so informed the defendant. The defendant performed two operations on the nose, removing the anterior ends of the lower turbinates. After the second operation, a mastoid abscess appeared, which was operated on.

The first charge of improper treatment was that the first operations were performed while the patient had a severe cold, and that this was improper because of the acute inflammation in the mucous membrane lining the nasal cavity. It was claimed that the defendant should have first reduced the inflammation, and that his operating without so doing caused the mastoid abscess. The court, having examined the evidence, had no difficulty in determining that there was evidence which justified submitting to the jury the question whether or not it was ordinary care and skill to perform the operations on the nose at the time and under the conditions that existed.

As stated, the plaintiff testified that he informed the defendant of his severe cold at the time. The defendant urged that this testimony was incompetent, or at least insufficient as the basis for the opinions of the experts who testified to the impropriety of an operation under such conditions. It is true that, ordinarily, one who is not a medical expert is not permitted to diagnose his own or another's case, but the court thinks that the prohibition does not extend to testimony of this kind. One who is suffering from a cold usually knows what ails him, as do others who associate with him. It would be a technical and rather absurd rule that prevented his testifying to facts so within his own knowledge. The court is satisfied that the testimony was competent and of sufficient weight to be the basis of expert opinion. As to the medical testimony, it is sufficient to say that it made the propriety of an operation a question for the jury.

Case Showing Right of Recovery for Services Rendered to Injured Employee

(Newberry vs. Missouri Granite and Construction Co. (Mo.), 163 S. W. R. 570)

The St. Louis (Mo.) Court of Appeals affirms a judgment in the plaintiff's favor for services rendered to an injured employee of the defendant by the plaintiff and two other physicians and surgeons. The court says that the employee was so severely injured by an explosion in the defendant's stone quarry as to occasion the amputation of both hands. The defendant's president was in St. Louis at the time, as was also its secretary, treasurer and general manager, named Schmalz. Its foreman at the quarry immediately took the injured man to a physician, and that physician, with the consent of the foreman, called in another physician, but neither one was prepared to undertake the operation, and the foreman sent a telephone message to the plaintiff to come at once and undertake it. The plaintiff inquired concerning the matter of compensation, and the foreman said that the company would settle the bill. The foreman then called up Mr. Schmalz and informed him of the serious injury to the employee, and that he had called in the three physicians to care for the employee. Mr. Schmalz was at the time in the company of the president, and consulted with him about the case. The foreman testified that Mr. Schmalz fully approved of all that he had done, telling him to have some one competent to operate and have the local physicians treat and care

for the patient, and then to bring him to St. Louis if deemed best. On the other hand, Mr. Schmalz and the president said that they intended no more than that temporary treatment should be given by the local physicians and arranged for permanent treatment at St. Louis. The mere fact, however, that there was this discrepancy in the testimony was a matter for the jury alone. The evidence showed beyond question that the physicians intended to charge the company, and the evidence of the foreman was abundant that he contracted for the company with full authority from the president. Whatever may be said concerning the authority of a general manager of the company to employ a physician to treat one injured in the quarry, no one can doubt the authority of the president in that behalf. The question is not even a debatable one. The injured employee testified in behalf of the plaintiff, and the defendant's counsel drew from the witness that Mr. Schmalz had offered him $500 by way of a compromise, and said, too, that he would pay the physicians $100 for their services. It appearing that no treaty of compromise was pending with respect to the physicians' claims, and that in any event the person to whom the seeming admission of a liability was made in no wise represented the physicians, the evidence was properly received.

Physicians May Testify as to Men Shrinking From Operations

(St. Louis Southwestern Railway Co. of Texas vs. Brown (Tex.), 163 S. W. R. 383)

The Court of Civil Appeals of Texas says that the railway company complained of the admission of testimony by physicians that the ordinary man is inclined to shrink from an operation, and that nowadays nearly every man knows that, when he has to be operated on, he is running some risk, the objection being that it was not a subject of expert testimony, but was an invasion of the province of the jury. While the physicians testified that the chances were very good for a permanent cure of the rupture involved in this case, it was stated that every case is not successful. No class of persons have a better opportunity of knowing the risk of such an operation than physicians, or of the way in which the ordinary man regards an operation. It was also shown that the taking of an anesthetic proved dangerous, and the court thinks it was proper to give the physicians' opinion to the jury to rebut the effect on the jury of the testimony that a cure would result from an operation, and that care was not exercised because the plaintiff failed to resort to an operation. The company pleaded that the plaintiff (Brown) was guilty of negligence in failing to have proper treatment of his injuries, and in failing to have an operation performed. The court is of the opinion that under the circumstances the evidence was admissible.

Competent to Testify About New Operation

(Niles vs. Central Vermont Railway Co. (Vt.), 89 Atl. R. 629)

The Supreme Court of Vermont says that a surgeon was a witness for the plaintiff, and the trial court found him qualified to testify as an expert. He described a comparatively new operation, known as the Murphy operation, in which, in cases like the plaintiff's, a piece of bone is taken from a patient's sound leg and used as a grafted splint on his injured leg. He was asked if the removal of such a piece of bone would impair the sound leg, and, when he answered in the affirmative, was asked to what extent it would impair it, and answered, subject to exception, to the extent of 20 per cent. The only objection urged was that the witness had never performed this operation, nor seen it performed, and consequently was not qualified to testify as an expert regarding the matter referred to in the question. But the finding of the trial court that the witness was qualified was abundantly sustained by the evidence on that question. For it appeared that he had had a long experience in surgery, under exceptionally advantageous circumstances, both in this country and abroad. Actual experience in the Murphy operation was not necessary to qualify him to answer the question objected to.

Society Proceedings

COMING MEETINGS

American Medical Association, Atlantic City, June 22-26.

American Academy of Medicine, Atlantic City, June 19-21.
Am. Assn. of Genito-Urinary Surgs., Stockbridge, Mass., May 15-16.
American Climatological Association, Atlantic City, June 19-20.
American Dermatological Association, Chicago, May 14-16.
American Gastro-Enterological Association, Atlantic City, June 22-23.
American Gynecological Society, Boston, May 19-21.
American Laryngological Association, Atlantic City, May 25-27.
American Laryn., Rhin., and Otol. Society, Atlantic City, June 19-20.
American Medico-Psychological Association, Baltimore, May 26-29.
American Ophthalmological Society, Hot Springs, Va., May 12-13.
American Orthopedic Association, Philadelphia, June 18-20.
American Otological Association, Atlantic City, May 27-28.
American Pediatric Society, New London, Conn., May 26.
American Proctologic Society, Atlantic City, June 22-23.
American Society of Tropical Medicine, Boston, May 29-30.
American Therapeutic Society, Albany, May 29-30.
American Urological Association, Philadelphia, June 18-20.
Arkansas Medical Society, Eldorado, May 19-22.
Association of American Physicians, Atlantic City, May 12-13.
Conf. of State and Prov. Boards of N. America, Washington, June 19-20.
Connecticut State Medical Society, New Haven, May 20.
Florida Medical Association, Orlando, May 13-15.
Illinois State Medical Society, Decatur, May 19-21.
Iowa State Medical Society, Sioux City, May 13-15.
Maine Medical Association, Portland, June 10-11.
Massachusetts Medical Society, Boston, June 9-10.
North Carolina Medical Society, Raleigh, June 16.
Missouri State Medical Association, Joplin, May 12-14.
National Association for the Study of Epilepsy, Baltimore, May 25.
Nebraska State Medical Association, Lincoln, May 12-14.
New Hampshire Medical Society, Concord, May 13.
New Jersey Medical Society, Spring Lake, June 29.
North Dakota State Medical Association, Grand Forks, May 13-14.
Oklahoma State Medical Association, Guthrie, May 12-14.
Rhode Island Medical Society, Providence, June 4.
South Dakota State Medical Association, Watertown, May 26-28.
Texas State Medical Association, Houston, May 12-14.
West Virginia State Medical Association, Bluefield, May 13-15.

TENNESSEE STATE MEDICAL ASSOCIATION

Eighty-First Annual Meeting, held at Memphis, April 7-9, 1914

(Continued from page 1428)

The Corynebacterium Hodgkinii

Dr. William Litterer, Nashville: The *Corynebacterium hodgkinii*, a pleomorphic diphtheroid organism, is apparently the etiologic factor in Hodgkin's disease. In my series of four cases, a white staphylococcus was constantly present in all lymph-nodes examined and was more numerous in the later stages of the disease and in the older nodes. The *Staphylococcus albus* probably plays an important part in the causation of the exacerbations, especially inducing the high fever with leukocytosis and a polymorphonuclear increase. Autogenous vaccines of the coccus and bacillus in their relative proportions should be administered in practically every case. Excellent therapeutic results may be derived from their use, more particularly in the early cases.

DISCUSSION

Dr. William Krauss, Memphis: Our former conception that these tumors appear necessarily about the neck, and the inguinal glands primarily, is no longer tenable. Sometimes they are primarily mesenteric, sometimes primarily mediastinal, sometimes primarily in association with the gum, and they, or at least their metastases, have a remarkable tendency to appear in an area of chronic inflammation, so that whenever we have an adenopathy of the neck, the axilla or the groin, and we have, say, an ulcerating tooth and a marked swelling with tumefaction, with the production of tissue greatest in that neighborhood, it really makes our diagnosis Hodgkin's disease.

Dr. John Phillips, Cleveland, Ohio: I have been much interested in Hodgkin's disease. I have had two cases in the last five years in which a recurrent fever kept up for sixteen months. These patients would have variable elevation of temperature for about twelve days, being quite ill; then there would be a period of normal temperature, and the patient during that time was usually well.

DR. W. S. LAWRENCE, Memphis: It is fairly well established that the Roentgen ray is the main reliance in the treatment of Hodgkin's disease. If that is true, it is interesting to know in what manner it accomplishes the result. Is it the influence of the ray on the organism which presumably is causing the disease, or on the tumor growth? In other diseases associated with micro-organisms we sometimes find that the Roentgen ray will accomplish results, although it will have no effect on the organism itself in pure culture. Tuberculosis of the skin is a good illustration of that. The Roentgen ray has absolutely no effect on the tubercle bacilli, but it has a wonderful influence on skin lesions caused by the tubercle bacilli.

Present-Day Problems of the Medical Profession

DR. W. D. HAGGARD, Nashville: Education is the dynamite of civilization. Great safeguards against unworthy practitioners have been initiated by the profession in the laws which they favored for proper examination by the state boards. In spite of the fact that the medical profession has thrown the most rigid preparation for practice, comprising five years, around itself, there are all sorts of would-be practitioners without any real knowledge, who wish to treat diseases of the human body by reading to the victims from a book or rubbing the spine. Fee-splitting, which is one of the most pernicious practices followed, must be eradicated forever.

Autogenous vaccines are far more reasonable, scientific and successful than mixed vaccines in their effect on a given condition, and should always be the first thought of those who have laboratory facilities. The practice of employing mixed vaccines in conditions of obscure etiology in the hope that one or the other may do good, is to be condemned severely.

Public health is purchasable. Within natural limits any community can determine its own death-rate. Tennessee is a healthy state, but by the expenditure of a reasonable amount of money by the state and county, under scientific guidance, it could be made a veritable paradise. The pure-food laws and their enforcement should be sacred to every intelligent citizen. The pure-food inspectors are of more value to a community than an embattled army. The antinarcotic law should be supported by every medical man, druggist and individual. The social diseases are the world-wide problems of the medical profession. The lawmakers of Tennessee should be asked to consider seriously the plan being tried out in New York of making all venereal diseases reportable, without the names. Thus an accurate survey of its exact prevalence would be the first step toward the intelligent curtailment of this monstrous evil.

Fraudulent medical advertising should be stopped. One of the most serious problems is the education of the people against fake medical advertising. When the newspapers of the country understand the enormity of the harm that is inflicted on humanity by their heedless and ignorant advertising of useless or harmful and often malicious forms of treatment for real or imaginary disease, they will surely clean the Augean stables.

Means of Resuscitation in Apparent Anesthetic Fatalities

DR. E. M. SANDERS, Nashville: The most important phase of resuscitation is to recognize its need immediately, and the first step is to establish artificial respiration with tongue drawn out and shoulders slightly elevated, and then decide about the position in which the patient had best be treated. The Trendelenburg position is not indicated in every case and should not be used except when the heart is failing. The pulmotor should be used whenever available. Epinephrin is the best drug and in extreme cases should be introduced into the pericardium.

The possibility of resuscitation bears a definite relation to the time that has elapsed between the cessation of the heart-beat and its reestablishment. Transfusion should be made as soon as possible in all cases not doing well under anesthesia before paralysis occurs. All artificial aids should cease as soon as functions are competent.

(To be continued)

MEDICAL ASSOCIATION OF GEORGIA

Sixty-Fifth Annual Meeting, held at Atlanta, April 15-17, 1914

(Concluded from page 1429)

Cerebrospinal Syphilis

DR. W. R. HOUSTON, Augusta: The treatment of cerebrospinal syphilis must be energetic. The limit of dosage should be the limit of the patient's tolerance for the specific drug. The time for relaxing the vigor of the treatment is to be determined by the disappearance of the clinical symptoms. Irreparable damage may have taken place if we wait for the recrudescence of symptoms. The use of Swift and Ellis' technic for the topical application of salvarsanized serum is yet under discussion. The reports so far seem to indicate that as good temporary results clinically are obtained by the intravenous use of salvarsan, but that the reactions in the fluid are not altered by the administration of the salvarsan into the blood as they are by the local applications. Many interesting theoretical considerations suggest themselves when we come to consider which plan of treatment we should pursue. Amounts of salvarsan equivalent to that contained in the salvarsanized serum may be injected into the cord without danger, and this will enable us to decide definitely as to the effect of the presence of salvarsan in the fluid on the tissue changes. The striking therapeutic successes achieved in what was formerly so intractable a disease as tabes, encourages us to unusual efforts in the employment of every aid in securing an early and accurate diagnosis. With increased ability to cure the disease goes increased obligation to recognize it in time.

Headaches

DR. WILL H. MALONE, Marietta: The first step in the treatment of any disease is the removal of the cause, if possible, and this holds true in headaches as well as in any other condition. Nothing could be more irrational than a routine administration of medicine to quiet the suffering without attempting to remove the cause where this is possible. Many forms of headache are susceptible of prompt relief or entire cure by timely and sensible regulation of the life of the patient, his habits, surroundings, influence of occupation, and by the correction of diseases and disorders on which the headache depends. In these various ways may be influenced the headaches of indigestion, biliousness and constipation; of cerebral overwork and emotional excitement; of insolation and eye-strain; of many cases of debility; of bad ventilation; malaria and overstimulation of various sorts; of uterine and ovarian disease and of syphilis.

Experimental Study of the Abderhalden Test

DR. ALLEN H. BUNCE, Atlanta: I have completed 34 tests for pregnancy, 16 of which were positive, and 17 were negative. In no case have I obtained a negative reaction in a proven pregnancy. However, I did, at first, obtain several positive reactions in cases where pregnancy was known not to exist, but my results here were due to faulty technic, such as obtaining the serum from patients soon after meals when amino-acids were present in the blood. They give a positive reaction to the ninhydrin test. In my last 30 cases I have not had this error occur, since I have found that if any reliance is to be placed on the tests an absolute adherence to the technic must be observed in every case.

My cancer albumin was prepared from a carcinoma of the breast in the same manner in which the placental albumin was prepared. So far, my tests on cancer have only included known positive and known negative cases, but from the results to date, I believe we have here a very valuable aid to substantiate and strengthen our clinical diagnosis in doubtful cases.

Report of Work Done Toward Eradication of Hookworm Cases in Georgia

DR. A. G. FORT, Atlanta: The sanitary index from 47 counties shows that of the 14,469 homes inspected, the toilet conditions at 7 homes averaged 75 per cent., at 21 homes averaged 25 per cent., at 10,217 averaged 10 per cent., and 4,224 averaged 0. It shows that in the 35 counties where dis-

pensaries were operated we examined 16,531 rural schoolchildren, and of that number 13,160 were infected with hookworm, or 79 per cent. To aid in this work, 52 counties have made appropriations, and that during the time we have carried on the work 51,166 people have been examined. Of this number, we have treated by our field force 14,632 and have reports from 1,400 physicians showing that they have treated 19,848 cases, which gives us a total record of cases treated in Georgia of 34,480. In order to accomplish these results, our field force has given 1,922 lectures and the central office has given 201 talks on sanitation and hookworm disease. We have had an attendance at these talks of 158,149.

The More Rational Methods of Treating Aural Diseases

Dr. Dunbar Roy, Atlanta: During the last six years I have been able in at least 90 per cent. of the cases of acute inflammation of the tube and middle ear to abort the inflammation by topical applications of astringents to the inside of the tube with small cotton or wire applicators passed into the mouth of the tube. In the use of the Eustachian catheter we have the only rational method of inflating and treating the middle ear. The catheter is introduced under direct observation by means of the pharyngoscope. The mucous membrane of the Eustachian tube and middle ear must be treated, and in no other way can we put medicaments on these parts except by the use of the catheter.

PHILADELPHIA COUNTY MEDICAL SOCIETY

Meeting held April 8, 1914

The President, Dr. William D. Robinson, in the Chair

A Case of Osteitis Deformans

Dr. Eleanor C. Jones: The disease began at the age of 53 years. The patient has lost about 4 inches in height, because of the bowing of the legs and curvature of the spine. Her head is large and square-looking, the thorax small and emaciated, the clavicles thickened. The spine has the appearance of sinking into the pelvis. The pelvis is wider than normal, and all the long bones are bowed. The arteries are somewhat atheromatous, and the second aortic sound is accentuated and there is a loud systolic murmur present. The urine showed a cloud of albumin. The Wassermann was negative. The summary of the bone changes found by roentgenographic examination were those of new bone formation, porosity, a softening arthritis and bone absorption. No suggestions could be made as to the cause of the disease in this patient.

The Correlation of Appendicitis and Other Abdominal Affections

Dr. Levi J. Hammond: Aided by abundant clinical evidence we must conclude that the frequency of the coexistence of abdominal inflammations with appendicitis is more than a coincidence. A critical analysis of the findings in 920 operations at the Methodist Episcopal Hospital, Philadelphia, would seem to indicate that the existence of the appendix establishes an important anatomic and physiologic relation to the remainder of the digestive system. It must therefore, be considered as a specialized and functioning organ blending with the remainder of the digestive tract. The principal characteristic of the appendix is lymphoid tissue. One property of lymphoid tissue is to produce leukocytes, and it is only after the sclerosed appendix has impaired or destroyed the function of the lymphoid tissue that acute appendicitis develops. As to the demonstrable anatomic relation of the appendix with other abdominal organs, I would especially refer to that of the mesoappendix and the ovary by a peritoneal fold extending directly from the former to the latter. This relationship explains the frequent association of the appendix and adnexal disease. Of all the organs, the liver is the one which appendicitis causes to suffer most. Epigastric symptoms must be regarded as reflex phenomena caused in the domain of the vagus nerve by irritation in the nerve terminals of the appendix. Gastric dyspepsia in chronic or recurring appendicitis is thus explained, dependent as it is on trouble within the secretory, motor or vasomotor function of the viscera. Neuralgic or neurotic pains are in like manner referred to the hip, the thigh or to the thorax as in pneumonia and acute tuberculosis. Chronic duodenal and gastric ulcers would seem to be dependent on septic thrombi of appendiceal origin. Biliary lithiasis, chronic cholecystitis and hepatitis furnish forceful evidence in support of their origin in part, at least, in primary infection of the appendix. Diagnosis must be based on existence of a painful zone. This can always be elicited at the point at which the appendix is located, if palpation combined with rectal and vaginal examination be thorough.

Recurrent attacks of supposed typhoid have proved to be chronic appendicitis, and prompt cure followed removal of the appendix. When differentiation of the various abdominal affections is doubtful and the morbid symptoms justify operation, this should be done through an incision allowing intervention with the viscera and the appendix, with the ovary and the appendix, or with the kidney and the appendix. Faisans says that appendicitis is so frequent that one must always think of it and seek for it systematically by aid of interrogation and a complementary examination as one seeks for syphilis and alcoholism.

INTERNATIONAL SURGICAL ASSOCIATION

Fourth Congress held in New York, April 13-16, 1914

(*Continued from page 1427*)

SYMPOSIUM ON GASTRIC AND DUODENAL ULCER

Ulcer of the Stomach and Duodenum

Dr. H. Hartmann and Dr. P. Lecene, Paris: Duodenal ulcer is certainly more frequent than was thought some years ago; nevertheless its frequency has been exaggerated in France. We noticed on an average one ulcer of the duodenum for eight or ten of the stomach. The symptomatology described by Moynihan and the anatomic signs supposed to be presented by the pyloric vein are far from being above criticism. Moynihan's symptomatology is that of pyloric spasm, and the pyloric vein is very unreliable as regards both situation and disposition. At the base of callous ulcers of the stomach, which are situated especially on the lesser curvature, lesions of neuritis are frequently found, accounting for the persistent pains which are one of the elements of the symptomatology of these ulcers. The cancerous evolution on the borders of callous ulcers of the stomach do not appear to us as often as certain writers assert. We have noted it in about one-fifth of the cases of callous ulcer. This frequency is still great enough to justify the treatment of these ulcers by resection when it is possible. Evidence shows that in ulcerous cases one has often to deal with gastric tissues wholly diseased, and in this lies the reason of the great importance of postoperative medical treatment in these cases. The value of roentgenoscopy and roentgenography in the diagnosis of gastric ulcer is universally recognized, but its value in the diagnosis of ulcer of the duodenum seems to be much less certain.

The surgical treatment of gastric and duodenal ulcer must not be opposed to the medical treatment; the first is only the frequently necessary complement of the second. The ultimate results of medical treatment are far from being as good as was formerly supposed. All gastric or duodenal ulcers showing resistance to medical treatment belong to the surgeon. Posterior gastro-enterostomy, with a short jejunal handle, performed on the pyloric cavern itself, at its most sloping point, is the operation of choice in all cases of juxtaposition ulcers of the stomach or duodenum. Experimentally and clinically it has been shown that with this operation the gastro-intestinal passage functions perfectly if care is taken to make it exactly on the pyloric cavern. The indications for the exclusion of the pylorus need to be more clearly shown. The absolute exclusion should be limited to certain

cases. In cases of pyloric callous ulcers when cancerous degeneracy is suspected, pylorectomy is preferable when anatomically possible. In callous ulcers of the lesser curvature it is better to have recourse to excision of the ulcerous area. The still fairly high mortality of these gastric resections will certainly decrease in proportion as their indications and technic become more clearly defined.

Chronic Ulcers of the Stomach and Duodenum

DR. WILLIAM J. MAYO, Rochester, Minn.: A historical review of this subject divides itself into three periods. The first period was from 1893 to 1900 when only those cases showing pyloric obstruction were operated. During the second period, from 1900 to 1906, knowledge on this subject grew rapidly as the result of surgical observation. In the third period, from 1906 to the present time, there has been marked improvement in diagnosis. Up to Dec. 31, 1913, we have operated in 1,841 cases of acute and chronic ulcers of the stomach and duodenum at St. Mary's Hospital. Of this number 457 were females and 1,384 males. The earlier clinical view of a preponderance of females over males is thus shown to be in error. The ulcers were situated in the stomach in 636 of the 1,841 cases, and in the duodenum in 1,205. The percentage in the last 1,000 cases accurately observed was 73.8 per cent. duodenal and 25.2 per cent. gastric. Of the gastric 29 per cent. were females and 17 per cent. males. Of the duodenal 21 per cent. were females, and 79 per cent. males. The pyloric vein was a factor in differentiating between an ulcer in the pyloric end of the stomach and one in the first part of the duodenum. The more common seat of gastric ulcers was along the lesser curvature, more often on the posterior than on the anterior wall. The character of ulcers of the stomach differs in many respects from those of the duodenum. A large number of acute, subacute and chronic ulcers are cured permanently by medical treatment, but if cures fail to show permanency after a reasonable length of time the patients should be treated surgically. The patient treated medically is in far greater danger of death from hemorrhage, perforation, obstruction or cancerous degeneration than he is from operation. Gastrojejunostomy is the most generally useful operation for gastric ulcer and has a wide field of application, especially in ulcers in the vicinity of the pylorus. It may be said that the greater the obstruction within limits, the more immediate and permanent the results of gastrojejunostomy. Posterior jejunostomy is the operation of choice, but adhesions may prevent its use in certain cases. Local excision of the ulcer without gastrojejunostomy has in our experience sometimes failed to effect a cure, and therefore gastrojejunostomy should be done in addition to excision.

Our operations for duodenal ulcer have been extraordinarily good, 98 per cent. of the patients being either cured or greatly relieved. In these operations we have used the Heineke-Mikulicz pyloroplasty, or what has been found still better, the gastroduodenostomy of Finney. We have abandoned the continuous silk sutures in gastrojejunostomy for interrupted musculoperitoneal sutures of fine silk, with continuous sutures of chromic catgut for the inner rows. As a secondary operation for the relief of pain due to fixation of pyloric end of the stomach about an ulcer, the unilateral exclusion of von Eiselberg has given permanent relief.

Etiology, Pathology and Operative Technic of Gastric and Duodenal Ulcer

DR. E. PAYR, Leipsic: There are two principal theories in regard to the etiology of these ulcers, that of a gastric or duodenal lesion and that of a nervous origin by vasomotor spasm leading to a localized ischemia of the mucosa. Neither theory explains every case. Some mechanical causes play a part in the localization and form of the ulcers. The bacteriotoxic lesions have also a certain part in their causation. There are two types of duodenal ulcers according to their position in the posterior or anterior wall; the first presents a tendency to perforation, the second to hemorrhage. It is impossible to establish the frequency of the cancerous transformation of a gastric ulcer, or to establish before the operation a decided distinguishing diagnosis between callous ulcer and gastric cancer. The callous ulcer of the stomach should be resected every time the general condition of the patient allows it, especially if it is situated at a distance from the pylorus and on the lesser curvature and on the posterior surface. In all other cases, posterior gastro-enterostomy constitutes the operation of choice. The excision of gastric ulcers gives unsatisfactory results unless accompanied by gastro-enterostomy. The excision or resection of duodenal ulcers should be exceptional, except in the presence of persistent hemorrhage, imminent perforation or suspected cancer. The best intervention for duodenal ulcer consists in a gastro-enterostomy combined with a unilateral pyloric exclusion after the von Eiselberg method. For ulcers of the lesser curvature and those of the posterior surface, total segmentary resection with axial suture of the stump gives the best results. For certain cases of ulcer near the pylorus, especially with the rate of acidity increased, after resection there should be a wide implantation of the gastric stump in the first jejunal handle after the technic of Reichel. This process perhaps guards against peptic ulcer. If the latter occurs, resection is advisable. Gastro-enterostomy for a simple callous ulcer necessitates a consecutive treatment with atropin and alkalines for at least a year. In cicatricial stenosis of the pylorus, gastro-enterostomy gives excellent results. In active ulcers distant from the pylorus the results are less reliable. Only in 50 or 60 per cent. of these cases were the results satisfactory. The mortality of resection of ulcers by Reidel's method was 10 per cent. or less and the clinical results were good.

Discussion on Gastric and Duodenal Ulcer

DR. A. LAMBOTTE, Brussels: It is clearly established that pyloric exclusion constitutes an important supplementary procedure to gastro-enterostomy. The simplest method of effecting this exclusion is by ligature of the pylorus. I have had recourse to this procedure for several years. It had been said that the occlusion is not permanent, that the ligature falls into the intestinal cavity. The ligature can be applied so that this does not happen. If the thread is drawn tight, to the point of arresting the circulation of the blood, it cannot fail to produce a section of the tissues, and with the aid of peristalsis there is not much delay in expelling the ligature into the intestinal cavity. When, on the other hand, the ligature is loosely drawn, so as just to bring the mucous membrane into contact, the thread will not be drawn into the intestine. I have not had occasion to verify by sight the permanency of the occlusion thus effected, but I have been able to prove its efficiency by using it in intestinal surgery. Each time that I do an entero-anastomosis I close the excluded end by a simple ligature placed some centimeters below the artificial anus. In the latter case I have been able to verify the closure several months later. Linen thread is employed and the ligature is placed habitually over the sphincter, which is located by palpation. The great advantage of this method is its extreme simplicity, the entire procedure taking only a few seconds. After this method of pyloric exclusion there need be no fear of hemorrhage, and, furthermore, it can be used in the weakest patient.

It is necessary to seek the origin of peptic ulcers in the operative technic that has been followed, rather than in the pathologic disposition of the patient. I have encountered only one case in more than 600 operations on the stomach, and am convinced that traumatisms produced by instruments or the fingers of the operator are responsible for peptic ulcers and that this also explains the variable percentage of peptic ulcers observed by different surgeons.

DR. CHARLES L. GIBSON, New York: The following statistics have been collected from the Hudson Street, Roosevelt and St. Luke's hospitals during the past eighteen months by Dr. P. R. Turnure. During this time there were 74 operations in cases of perforating gastric and duodenal ulcer; of these 47 were gastric and 27 duodenal ulcers. Of 26 patients operated on within twelve hours after perforation, 16 were cured and 10 died; of 7 patients operated on in from twelve

to twenty-four hours after perforation, 1 was cured and 6 died; of three operated on in from twenty-four to forty-eight hours after perforation, 2 were cured and 1 died; of 12 coming to operation after forty-eight hours, 4 were cured and 8 died. The complications encountered in the order of frequency were subphrenic abscess, pneumonia, gastric hemorrhages, secondary adhesion and empyema. Of 48 cases, 16 broke down between the seventh and twelfth days. Gastro-enterostomy was done in 17 cases and of these patients 15 were cured and two died.

DR. SONNENBURG, Berlin: The diagnosis of gastric and duodenal ulcer is by no means a simple matter. In cases of recently perforated duodenal or gastric ulcer the history is rarely characteristic. In chronic cases pain is frequently absent. In ten cases of perforated duodenal ulcer, five gave no history of gastric disturbance, and in three the gastric disturbance was noted for only a few days or a week. The characteristic history of periodic attacks of hunger-pain with intervals of apparent well-being noted by Moynihan has been absent in many of our cases. On the whole, the history was more characteristic in the chronic cases. The pain in the right side of the abdomen near the umbilicus, which has been mentioned as characteristic, was frequently absent or found in other abdominal regions. Increasingly good results from operative treatment will accrue as operative technic improves and diagnosis becomes more accurate through roentgenoscopy. Max Cohn has found that stiffening of the ventricle and too rapid emptying of the stomach are in no sense pathognomonic, only accompanying symptoms of gastric and duodenal ulcer, but that retention of bismuth in the duodenum is of great importance. Abnormal gas formation is also of great import, especially gas bubbles in the first part of the duodenum. The majority of physicians in Berlin agree that the diagnosis of duodenal ulcers remains a probable and not an absolute diagnosis. We have found the relative frequency of gastric and duodenal ulcers at variance with that of American surgeons. In our series of 80 cases there were 13 duodenal ulcers and 67 gastric. A low leukocyte-count is of grave diagnostic import, indicating a virulent infection. In my experience the mononuclear leukocytes fall rapidly to normal in favorable cases, while in the lethal cases they remain high to the end. The leukocyte-count is more inconstant and fluctuating in cases of ulcer than in those of appendicitis. Peritonitis following perforating ulcers often runs a benign course with encapsulation of the abscess. In the late stage of the disease the leukocyte-count indicates the treatment to be followed.

DR. ARTHUR DEAN BEVAN, Chicago: Dr. Rosenow's experimental work on the etiology of ulcers shows that certain micro-organisms have a selective activity for certain anatomic localities. With certain strains of micro-organisms Dr. Rosenow has produced endocardial lesions; with others he has produced arthritis, and with others gastric and duodenal ulcers, etc. In ten or twelve instances, cultures from duodenal ulcers have been introduced intravenously into animals and have produced typical gastric and duodenal ulcers. This selective action of certain micro-organisms is not the only factor in the production of these ulcers; the lowered resistance of the individual and the local condition due to the corrosive action of hydrochloric acid also play a part in the etiology of these ulcers. Proper medical management has enormous possibilities in gastric and duodenal ulcer, and the patient who receives proper medical attention after operation has a shorter and smoother convalescence. The unfortunate results after operation for gastrojejunal ulcer may largely be prevented by proper medical management.

DR. JOHN B. MURPHY, Chicago: From clinical observation alone it seems evident that gastric and duodenal ulcer are practically metastatic lesions. This may be illustrated by their occurrence at that season of the year when infections of the upper air-passages are most frequent, and they also run the classical course of such infections. After using the round button for a number of years, I employed the suture method for a time, but now have returned to the use of an oblong button, which makes hemorrhage an impossibility.

DR. HOWARD LILIENTHAL, New York: When the ulcer is located near the pylorus, the entire ulcer-bearing portion of the stomach should be removed. The added risk of removing the entire danger-zone is less than leaving it for a future operation when cancer shall have developed. When the patient is in good condition the entire ulcer area can be removed at one operation, but when there is an indurated mass and one cannot see where it begins, the best procedure is to do a gastro-enterostomy with the minimum amount of manipulation, and then three weeks after the tumor can be removed and a pylorectomy performed. This method in indurated ulcers will give a lessened mortality.

DR. A. G. GERSTER, New York: With gastro-enterostomy and pyloric exclusion and even with resection of the pylorus, we sometimes have recurrences. There seems to be no sure way of permanently interrupting the passage of the food through the alimentary canal. After operation, patients experience relief, but they are not cured, as the ulcer is due to a condition which is not understood; and unless operation is reinforced by proper dietetic and hygienic management the relief is only temporary.

DR. WILLY MEYER, New York: As pathologic examination at the time of operation cannot always be relied on to determine definitely the possibility of cancer, the necessity of excising the entire ulcerous area cannot be emphasized too strongly. Some of the undesirable sequelae of these operations may be avoided if pyloric exclusion has a wider field. The two-stage operation may be good in some cases, but when every minute counts and the patient has the signs of hemorrhage, we should exclude the pylorus entirely. A modified Jianu operation and the use of Hultl's wire-stitching instrument may be made applicable to operations on gastric and duodenal ulcers.

DR. A. J. OCHSNER, Chicago: Animal experimentation has shown that it is very difficult to produce gastric or duodenal ulcers unless the animal is first rendered anemic, or unless certain strains of micro-organisms are introduced according to the method of Rosenow, or unless the circulation is very much interfered with. When we find in normal persons and in animals a condition in which it is so difficult to establish ulcers, this should be accepted as absolute proof that in the development of our methods of treatment provision should be made for restoration from a very severe condition. This is confirmed by the histories of these cases which habitually show an abuse of normal feeding. There has been long-continued irritation due to hyperacidity in the peptic ulcers. The patient has swallowed, perhaps, septic material from the teeth, the pharynx or the tonsils for years. These are some of the factors which keep up conditions favorable for the establishment of ulcers, and they correspond to the conditions in which it is possible to establish experimental ulcers. Consequently we have found many cases seemingly incurable in which if alkalinity is established and maintained, and anemia and faulty feeding overcome, a cure has been effected and maintained. When the patient is in a depraved physical condition, the two-stage operation is of the greatest importance.

DR. WILLIAM L. RODMAN, Philadelphia: We all believe that gastro-enterostomy has its limitations; while patients make operative recoveries, clinically they are not cured. It therefore seems that if more radical treatment can be employed without increasing the operative risk, it ought to be considered. We have been kept from removing the entire ulcerous area by an exaggerated idea of the operative mortality. Communication with one hundred prominent surgeons on this subject has resulted in statistics from fifty, embracing 375 radical operations. In 204 of these, pylorectomy has been done, and in 174, excision in the larger part of the stomach. The mortality in all was a little more than 5 per cent. (5.4 per cent.). The mortality of the pylorectomies was about 8 per cent. and that of the excisions less than 2 per cent. A careful analysis of the mortality tables has convinced me that many deaths are due to poor judgment in the selection of patients for pylorectomy who should

have had a preliminary gastro-enterostomy and then later a pylorectomy.

DR. WILLIAM J. MAYO, Rochester, Minn.: There are some points in Dr. Rosenow's work that require further experiment. Strains of streptococci have produced acute ulcer but they have not produced chronic ulcer. Some ulcers seem to be chronic from the beginning. We have been making some experiments to find out if obstruction is a factor in causing ulcers to become chronic. If cancer develops on an ulcer it is never in the base, but always in the overhanging margin; when cancer is found in the base of the ulcer it may be assumed that it has been cancerous from the beginning. If ulcers are within 1½ inches from the pylorus they are essentially duodenal. A one-stage operation is desirable when it can be done; the two-stage operation is only for the poor risks.

DR. BRÜNING, Giessen: The symptom-complex as described by Moynihan occurs in many cases of ulcer of the stomach but is absent in others. There is no way in which one can be absolutely certain as to the location of the ulcer. In operating on pyloric ulcers it is very important that the field of operation should not be subjected to too much manipulation or traumatism. The von Eiselberg *Ausschaltung* method is undoubtedly the best. It is my custom to cut around the entire stomach musculature a little above the ulcer and down to the mucous membrane. About this I lay a fascial strip which is pulled firmly and sewed in a ring. Over this the muscular serosa is again joined. A gastro-enterostomy on the anterior pylorus ends the operation. If the pylorus is ligated according to the method of Wilms, no food can irritate the ulcer, and all peristaltic waves are retarded. It is important to keep the stomach-contents alkaline, as acid increases the peristaltic action. Only small amounts of food should be given, as large amounts cause an expansion of the stomach, which initiates a response in the form of a contraction-wave. By these means I keep the entire field in the vicinity of the ulcer at rest.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Insanity, Baltimore

Special Number, LXIX, No. 5, pp. 835-1086

1 Psychiatric Clinic and Community. S. Paton, Princeton, N. J.
2 Specialism in General Hospital. W. Osler, Baltimore.
3 Purpose of Psychiatric Clinic. A. Meyer, Baltimore.
4 Sources and Direction of Psychophysical Energy. William McDougall, Oxford, England.
5 Autistic Thinking. E. Bleuler, Roche Harbor, Wash.
6 Personality and Psychosis. A. Hoch, New York.
7 Personal Factor in Association Reactions. F. L. Wells, Waverley, Mass.
8 Study of Neuropathic Inheritance. F. W. Mott, London.
9 Etiology of Pellagra and Its Relation to Psychiatry. O. Rossi, London.
10 Psychic Disturbances Associated with Disorders of Ductless Glands. H. Cushing, Boston.
11 Primitive Mechanisms of Individual Adjustment. S. Paton, Princeton, N. J.
12 Dementia Problems. K. Heilbronner, Utrecht, Holland.
13 Interrelation of Biogenetic Psychoses. E. Jones, Toronto.
14 Prognostic Principles in Biogenetic Psychoses, with Special Reference to Catatonic Syndrome. G. H. Kirby, New York.
15 Anatomic Borderline between So-Called Syphilitic and Metasyphilitic Disorders in Brain and Spinal Cord. C. B. Dunlap, New York.
16 *Mental Disorders and Cerebral Lesions Associated with Pernicious Anemia. A. M. Barrett, Ann Arbor, Mich.

16. **Mental Disorders and Pernicious Anemia.**—Barrett has studied clinically the mental disorders of 11 cases of pernicious anemia, and in 9 of these a histologic study of the brain was made. The symptomatology of these cases showed considerable variety. Two were cases of epilepsy; 2 were not to be differentiated from dementia praecox; 1 was a questionable manic-depressive psychosis, and 6 presented a characteristic picture of an asthenic state in which there developed a mental disorder of a paranoid type. It is to these paranoid conditions that this study is particularly devoted.

Brief accounts of 6 cases are given by Barrett. The first 2 of these showed that slight tendency toward delusional elaboration. In the remaining 4 the paranoid features were well developed. The cases, as a whole, have in common an irritability, and a suspiciousness which forms the ground on which develop the delusions of persecution. The content of the delusions is usually influenced by the somatic-neurologic symptoms and the situation in which the patient is placed as a result of these disturbances. In some instances there were auditory hallucinations to which the patient reacted with strong affect. In several cases there was confabulation, which suggested that seen in the Korsakow's symptom complex. There was no marked deterioration present, the comprehension and orientation were usually clear, except for rare episodes, in which they were slightly disturbed. In two instances the mood was slightly expansive. In a number of instances the course showed remission in the intensity of the symptoms and these corresponded to the remissions in the physical conditions. Underlying the development of the mental condition in all but one of these cases was a hereditary predisposition. In several instances there were a number of occurrences of mental abnormalities or insanity among the ancestors. In all cases of pernicious anemia with mental disorders studied, hereditary factors were found in the greater number.

The histologic changes in cord and brain as a whole, are not of a specific type, but rather those which occur in conditions of chronic intoxication and resemble those found in chronic alcoholism, namely, the occurrence of increased lipoid products in cells, glia overgrowth, vessel changes, miliary hemorrhages and intramedullary fiber degeneration. The similarity to a toxic type is further shown in the axonal type of reaction which was found in two instances, a change which has often been noticed in the Korsakow's symptom complex and various forms of toxic neuritic disorders. As in toxic processes the vessels are severely affected.

Clinically, Barrett points out there are features in these paranoid cases which resemble closely those seen in chronic and subacute toxic conditions, especially the chronic alcoholic delusional states. These are the occurrence of the suspiciousness and irritability, the development of the delusions of persecution, the auditory hallucinations and occasional memory impairment and confabulation.

American Journal of Physiology, Boston

April, XXXIV, No. 1, pp. 1-126

17 Circulation of Blood in Man at High Altitudes. I. Pulse-Rate and Blood-Pressure. E. C. Schneider and D. L. Sisco, Colorado Springs, Colo.
18 *Circulation of Blood in Man at High Altitudes. II. Rate of Blood-Flow and Influence of Oxygen on Pulse-Rate and Blood-Flow. E. C. Schneider and D. L. Sisco, Colorado Springs, Colo.
19 *Study of Mechanisms by Which Muscular Exercise Produces Acceleration of Heart. H. S. Gasser and W. J. Meek, Madison, Wis.
20 *Nerve Control of Thyroid. J. M. Rahe, J. Rogers, G. G. Fawcett and S. P. Beebe, New York.
21 *Variability of Blood-Pressure and of Vasomotor Irritability in Anesthetized Dog. R. S. Hoskins and H. Wheelon, Chicago.
22 *Studies in Fatigue. C. M. Gruber, Boston.
23 *Variations in Sensory Threshold for Faradic Stimulation in Normal Human Subjects. E. G. Martin, P. R. Withington and J. J. Putnam, Jr., Boston.
24 *Two Types of Reflex Fall of Blood-Pressure. E. G. Martin and P. G. Stiles, Boston.
25 *Influence of Food, Posture and Other Factors on Alveolar Carbon Dioxid Tension in Man. H. L. Higgins, Boston.

18. **Rate of Blood-Flow and Influence of Oxygen on Pulse-Rate and Blood-Flow.**—The rate of blood-flow in the hands of the six men examined by Schneider and Sisco was increased by residence on Pike's Peak by an amount varying from 30 to 76 per cent. The increase in the rate of flow has been associated in part with an augmented rate of heart-beat and a fall in the venous pressure, also in part with a dilatation of the arterioles. The breathing of an oxygen rich mixture slowed the heart-rate in each of the six subjects to a greater degree on Pike's Peak than in Colorado Springs. The average retardation was 14 per cent. at 14,109 feet, and

5.4 per cent. at 6,000 feet. The arterial pressure was not clearly altered at either altitude during oxygen inhalation; but the pulse, with one exception, was fainter and softer. Oxygen inhalation diminished the rate of blood-flow in the hands from 4 to 20 per cent. on Pike's Peak while the flow was not ordinarily altered in Colorado Springs. In view of the beneficial influence of oxygen inhalation—the retardation of the heart-rate and diminution in the rate of blood-flow—it was concluded that oxygen want induces the adaptive high altitude circulatory changes.

19. **Effect of Exercise on Heart.**—Acceleration of the heart at the beginning of voluntary exercise in the normal animal is chiefly due to the decrease in tone of the cardio-inhibitory center. Gasser's and Meek's evidence for this conclusion is the following: Electrocardiograph records confirm the work of Bowen and Buchanan that acceleration takes place as early as the cardiac cycle following the initiation of the exercise. Acceleration of the heart at the beginning of exercise persists after the removal of the accelerator mechanism. The actual increase in number of beats due to a given amount of exercise has been found to be practically the same in six dogs before and after removal of the stellate ganglia. One of these animals was observed for over four months. Acceleration on exercise is reduced after section of the vagi provided that all asphyxial effects are excluded. After the removal of the accelerators and subsequent section of the vagi, marked acceleration of the heart may still be produced by a short period of exercise. This is associated with the cyanosis following vagotomy and on the second day when the animal is able to do the same work without such a marked cyanosis the increase following exercise is greatly reduced. It may be increased again by asphyxiating the dog for some thirty seconds. After tying off the adrenals neither asphyxia nor exercise gave a marked increase in heart-rate. Exercise involving asphyxial conditions may then be accompanied by a secretion of the adrenals. In the normal animal with the vagi intact this secretion of adrenalin can hardly be supposed to affect the heart-rate. It may, however, cause an increase in the amplitude and force of contraction.

In six dogs the heart-rate after removal of the accelerators was found to be remarkably constant, averaging about 72 beats per minute. The resting pulse-rate of each animal is therefore believed to depend more on accelerator tone than on any other factor. After removal of all nervous control and elimination of the adrenals exercise may still cause a small acceleration of the heart. This is attributed to the increased temperature of the blood. Acceleration of the heart occurs on exercise after vagotomy and extirpation of the adrenals. The amount though small is more than can be accounted for by increased temperature of the blood. Acceleration may therefore be brought about through the accelerators if necessary. Our work leads us to believe that the accelerators are a factor of safety and that in exercise their action is superimposed on that of the vagi only in times of great need. Aside from this, their chief function is maintaining the level of the resting pulse.

20. **Nerve Control of Thyroid.**—The authors summarize their experimental results as follows: The average difference of iodin, expressed in mg. per gram of fresh gland, between the two thyroid lobes of seven normal dogs was 0.0055 mg. The average difference found when the superior vessels, with accompanying nerve fibers, of one lobe were stimulated was 0.1351 mg. The average difference found when the stimulus was applied to the vagus peripherally to the superior ganglion, the nerve being cut central to the ganglion and ligated peripherally to the stimulus, was 0.1699 mg. The average difference found when stimulus was applied to the intact vagus was 0.2640 mg. In Series 3, two glands were stimulated forty-five minutes and thirty minutes, respectively. If the loss in the remaining five glands which were stimulated three hours is averaged it will be found that a loss of 0.3588 milligrams per gram of gland occurred.

In no case did they fail to get a loss after stimulation. There seems to them to be no reasonable doubt from these results that the thyroid is at least in part under nerve control, and that its physiologically active substance is discharged into the circulation in response to a nerve stimulus.

21. **Variability of Blood-Pressure.**—Mean arterial blood-pressure in the individual anesthetized dog under laboratory conditions at different times was found by Hoskins and Wheelon to be fairly constant. Forty-six determinations in twenty-one dogs at intervals of five to ten days showed an average maximum deviation of 4.8 per cent. The greatest individual deviation from the average was 17 per cent. The pressor effect of standard doses of epinephrin injected at different times is proportionately somewhat less constant. The average maximum deviation from the average was 14 per cent. in twenty-one animals. The greatest individual deviation was 54 per cent. Similar results were secured with nicotin. The average maximum deviation was 15 per cent. in nineteen animals. The greatest individual deviation was 45 per cent. The reaction consisted of a concatenation of features often giving "reaction pictures" characteristic for each animal. The constancy of blood-pressure and of the reactions to epinephrin and nicotin is of a degree to permit their use as criteria of activity and irritability of the sympathetic nervous system.

22. **Studies in Fatigue.**—Gruber found that curare increases the threshold of the normal muscle but not the threshold of a muscle in which the nerve endings have degenerated. Epinephrin is an antagonist to curare and decreases, in five minutes or less, the curare threshold, in some cases to normal. Fatigue increases the threshold of a curarized muscle, and epinephrin antagonizes this fatigue. Gruber concludes that the substance on which curare acts is probably different from that on which fatigue acts. It either degenerates on nerve degeneration, is transformed by muscle atrophy or is inexcitable to electric stimuli.

23. **Faradic Stimulation in Normal Human Subjects.**—Daily observations for several weeks on nine subjects, all following a regular somewhat pressing routine, showed that at the beginning of the week the irritability tends to be high, that from then till the end of the week there is fairly continuous decline in irritability, as judged by the sensory threshold, and that following the interruption of the routine by the intervention of Sunday the irritability returns to its original high point. This is interpreted by the authors as a result of general fatigue incident on routine and restoration of nervous tone following a marked interruption therein.

24. **Two Types of Reflex Fall of Blood-Pressure.**—Martin and Stiles report the results of an attempt to bring the Martin method for the physiologic calibration of induction shocks to bear on the analysis of the depressor reaction.

25. **Alveolar Carbon Dioxid Tension in Man.**—The alveolar CO_2 tension was found by Higgins to rise after the intake of food and remains high so long as the food is in active digestion. The alveolar CO_2 tension is higher when one is in a relaxed position than when one is in an erect position. Thus the alveolar CO_2 tension is markedly higher standing than sitting, and higher sitting than lying. The taking of coffee, without food, caused a fall in the alveolar CO_2 tension. These variations, especially those from changing position, do not appear to be due to changes in the H-ion concentration of the blood (independent of the H_2CO_3); but apparently some other agent is affecting the respiratory center to cause these changes. A high alveolar air is coincident with vasodilatation, and a low alveolar CO_2 tension with vasoconstriction.

Archives of Internal Medicine, Chicago

April 15, XIII, No. 4, pp. 509-672

26 *Systemic Blastomycosis. A. M. Stober, Chicago.
27 Id. R. A. Krost, A. M. Stober, Chicago, and M. J. Moes, Dubuque, Iowa.
28 Id. T. Churchill and A. M. Stober, Chicago.
29 Id. M. Lewison and H. Jackson, Chicago.
30 Id. H. J. Myers and A. M. Stober, Chicago.
31 Id. T. H. Boughton, Lawrence, Kan., and S. N. Clark, Hospital.
32 Id. T. H. Boughton, Lawrence, Kan., and A. M. Stober, Chicago.
33 Id. H. Jackson, Chicago.
34 Id. R. E. Bechtel and E. R. LeCount, Chicago.
35 Id. F. B. Riley and E. R. LeCount, Chicago.
36 Id. J. S. Eisenstaedt, Chicago, and T. H. Boughton, Lawrence, Kan.
37 Id. P. F. Shaffner, Chicago.

38 *Multiple Primary Malignant Tumors; Two Cases in Dogs. F. K. Bartlett, Chicago.
39 Fatty Infiltration (Lipomatosis) of Auriculoventricular Bundle of His, with Sudden Unexpected Death. F. Nazum, Chicago.
40 *Blood-Pressures. J. H. Barach and W. L. Marks, Pittsburgh.
41 *Mechanism of Cardiac Displacements in Pulmonary Tuberculosis. M. Fishberg, New York.

26. **Systemic Blastomycosis.**—Vaccination with blastomycetes and their products for therapeutic purposes was performed by Stober in three cases, two systemic cases and one case of cutaneous infection. The material used consisted of the filtrate and the suspension of the triturated membrane of bouillon cultures grown at room temperature for periods varying from two to six months. The cultures were killed by heat (110 C.) and preserved with 0.8 per cent. chloretone. Subcutaneous injection of either the filtrate or suspension produced an area of induration varying in size according to the quantity used. A few of the larger areas became soft and fluctuating, owing to the formation of pus, which was sterile in all instances examined. Such indurations and abscesses were more constant and pronounced when the suspension was used, and did not occur with small quantities of the filtrate. A certain amount of pain was noted the first few days at the site of injection.

The general effect of such injections was usually a rise in temperature of from one-half to 2 degrees. This became apparent in from six to twenty-four hours and sometimes persisted seventy-two hours or longer. With the rise of temperature occurred a feeling of general malaise and pain in the back and extremities. Pain, however, was more especially manifest in and about the local lesions, in which a distinct inflammatory reaction occurred, consisting of pain, swelling, increased discharge, and often bleeding from the ulcerated surface. This receded in from twelve to forty-eight hours. The crusts became detached, the ulcers decreased in size and general improvement followed. Deep abscesses approached the surface and ruptured, and healing of old fistulas occurred. These effects were quite as apparent from small amounts of the filtrates as from larger amounts of the emulsions. The latter produced more general disturbance and temperature; in fact, a rise of temperature was noticed in three cases not blastomycotic in which sterile abscesses followed the injection of 4 c.c. of the emulsion.

38. **Multiple Primary Malignant Tumors.**—Multiple primary malignant tumors, according to Bartlett, occur in approximately 0.2 per cent. of all cases of malignant tumors. Certain of them that originate close together in one type of tissue are indicative of a localized tendency to malignant degeneration. Others that are essentially bilateral, occurring in the ovaries, testicles, kidneys and adrenals, are indicative of a tissue predisposition, dependent in most instances on an anomalous embryonal development. Besides these two classes there is another general class of cases, two-thirds of which is composed of multiple primary malignant tumors, the location and arrangement of which is strongly indicative of a system involvement, affecting mainly the reproductive, the gastro-intestinal and the cutaneous systems. In the other third of this class of cases, the tumors are distributed miscellaneously, and apparently have no common features. The two cases reported by Bartlett belong to the latter class, each animal having one tumor dependent indirectly on a metabolic disturbance, and another tumor distinctly of embryonal anlage.

40. **Blood-Pressures.**—In 90 per cent. of a series of 656 healthy young men Barach and Marks found that the maximum blood-pressure was under 150 mm. Hg. It would be still lower if we could eliminate psychic effect. In 96 per cent. of a series of 338 cases the minimum pressure when read at the fifth phase did not exceed 100 mm. Hg. In 87 per cent. of a series of 312 cases the minimum pressure, when read at the fourth phase, did not exceed 100 mm. Hg. On reexamination of the 13 per cent. in the series of 312 cases, we found that 99.4 per cent. had a minimum blood-pressure not over 100 mm. Hg. In 92 per cent. of the total 650 cases the minimum pressure did not exceed 100 mm. Hg at the time of the first examination. In 88 per cent. of a series of 629 cases the pulse-pressure ranged between 20 and 70 mm. Hg. There was no constant relation between the pulse-pressure and the diastolic pressure. In 75 per cent. of a series of 742 cases the pulse-pressure comprises anywhere from 20 to 80 per cent. of the diastolic pressure. There was no relation between physical efficiency, which also means circulatory efficiency, and pulse-pressure percentage of diastolic pressure. In a series of 344 cases, the poorer half gave practically the same pulse-pressure to diastolic pressure percentage as the stronger half, with their better circulatory system.

41. **Cardiac Displacements in Pulmonary Tuberculosis.**—In a large number of cases of phthisis in which Fishberg looked for the position of the heart while examining the thorax, he found it dislocated in a large proportion. Of 115 consecutive cases of pulmonary tuberculosis in 58, or 50 per cent., the heart was dislocated. Of 85 instances with early lesions 31, or 36 per cent., showed cardiac displacements. Of these 22 were displacements to the left and 9 to the right. In other words, 70 per cent. of the displacements were toward the left in early and second-stage cases of tuberculosis. Of 29 far-advanced cases, 27 showed cardiac dislocation, of which 15 were to the left and 12 to the right. Among 18 far-advanced cases with right-sided lesions, or in which the lesion was more extensive in the right side, 14 showed dislocations to the right and 4 to the left, and in one the heart was in its normal location. Of 19 left-sided lesions, or lesions more extensive on that side, there were 15 displacements to the left, one to the right; in one instance there was no displacement at all. Here the displacements were about equal between the two sides, and, with some exceptions, the shifting of the heart was toward the more affected side.

The dislocation is usually produced by traction exerted from the affected side. Pulmonary collapse and retraction, cavitation and fibrous bands running from the pleura to the pericardium drag the heart out of its normal place. Pressure exerted by a vicariously emphysematous lung on the opposite side greatly assists in displacing the heart to the affected side, or, in bilateral lesions, to the side which has the older or more serious lesion. In many cases we can determine in which side the tuberculous lesion is located, or in bilateral lesions in which side the older or more extensive lesion is located, by determining the location of the heart.

Dislocations take place more often toward the left hemithorax than toward the right for various anatomical reasons, mainly, however, because of the oblique position of the heart from right to left, and the strong attachment of the mediastinum to the central tendon of the diaphragm, which greatly counteracts traction exerted from the right pleura and lung. As a result about two-thirds of all displacements are toward the left side. In far-advanced cases the displacements are about equal between the two sides of the chest, and dextrocardia is not uncommon. Acquired dextrocardia is almost invariably of tuberculous origin.

In many cases of phthisis the heart is not only dislocated, but also rotated on its sagittal or vertical axis. In the normal position the cardiac apex is nearer the chest wall than the base. Traction exerted on the right side of the mediastinum may bring the base of the heart nearer the chest wall and push or pull the apex away from it. Elevation of the diaphragm also has a great influence on the position of the heart, and together with pleuropericardial adhesions may dislocate the heart in any manner—upward, downward, to the right or left; may bring it in a horizontal or vertical position, etc.

In the majority of cases the diagnosis of displacement can be made by percussion, auscultation and roentgenoscopy; but in some cases only the side of the heart adjoining the healthy lung can be mapped out by percussion, while on the opposite side its dulness merges with that of the pulmonary or pleural lesion and cannot be differentiated easily, and at times even the Roentgen ray is of no avail. In dextrocardia a good guide is the cardiac impulse. When only one point, with an impulse is found, it is usually the right ventricle that pulsates and not the apex, because in these cases the

latter is turned away from the anterior chest wall; if two points with pulsation are found the one to the left represents the apex and the one to the right the base or the right ventricle.

While tachycardia and dyspnea of phthisis are usually due to toxemia of the disease, the cardiac displacements are also responsible to some extent. Many patients cured of tuberculosis remain with permanent cardiac embarrassment because of the displacement of the heart.

Arizona Medical Journal, Phoenix

April, 11, No. 3, pp. 5-36

42 Functional Capacity of Kidney and Consideration of Quantitative Methods of Its Determination. J. I. Butler, Tucson.
43 Absence of Right Kidney. C. E. Yount, Prescott.
44 Artificial Pneumothorax in Pulmonary Tuberculosis. W. W. Watkins, Phoenix.
45 *Preparation of Nitrogen for Artificial Pneumothorax—Convenient Method. C. N. Boynton, Phoenix.

45. Preparation of Nitrogen for Artificial Pneumothorax.—Boynton uses ammonium nitrite, freshly prepared by mixing in solution pure sodium nitrite and pure ammonium chlorid. This forms, in solution, ammonium nitrite and sodium chlorid. The application of heat to the solution decomposes the ammonium nitrite into nitrogen gas and water. In the actual process, all glassware, rubber-tubing and water are sterilized in steam or by boiling before the apparatus is set up. The apparatus consists of a generating flask containing the two salts in solution, connected by rubber-tubing to a Wolff bottle in which the gas is washed through a solution of bichlorid of mercury. The gas then passes into a pressure flask in which it replaces the sterile water, forcing the latter into a sterile bottle, which constitutes the storage bottle for the water for the operation. The nitrogen obtained by this method is said to be 100 per cent. pure, absolutely sterile and more easily prepared. Twenty grams of the combined chemicals used in this method will yield four times the volume of nitrogen gas obtainable by the use of 150 grams of chemicals in the absorption method.

Boston Medical and Surgical Journal

April 23, CLXX, No. 17, pp. 637-672

46 *Treatment of Cases of Mental Disorder in General Hospital. P. C. Knapp, Boston.
47 Medical Inspection of Immigrants at Port of Boston. A. J. Nute, Boston.
48 Ptosis—Cause of Gynecologic Failure. F. S. Kellogg, Boston.
49 Physiologic Cost of Insufficient Protective Clothing. G. W. Fitz, Boston.
50 Fracture of Clavicle. F. E. Peckham, Providence, R. I.

46. Treatment of Mental Disorder in General Hospital.—It is not practical in Knapp's opinion to receive and care for such patients in a general hospital unless there be a special service under the charge of a visiting neurologist familiar with mental diseases and their treatment. The average American internist is too ignorant of mental and nervous diseases to deal properly with such cases. Something more is requisite than restraint while in the hospital and commitment at the earliest opportunity. The visiting physician must be familiar with mental diseases, he must be able to make a sound prognosis as well as diagnosis, must know how the patient is likely to behave and be ready to assume risks and to take proper precautions. He must have the control of his patients and their treatment without interference from administrative officers, and must be alone responsible for the treatment, the stay in the hospital, restraint and commitment. Only under such conditions can the reception and treatment of cases of mental disorder in general hospitals be of full benefit to the patient and the community.

Bulletin of American Academy of Medicine, Easton, Pa.

April, XV, No. 2, pp. 65-118

51 Social Factors Affecting Volume of Crime. J. L. Gillin, Madison, Wis.
52 Relation of Crime to Adolescence. W. S. Hall, Chicago.
53 Physical Basis of Criminality. C. R. Henderson, Chicago.
54 Physical Basis of Crime from Standpoint of Probation Officer. J. H. Witter, Chicago.
55 Relation of Feeble-Mindedness to Crime. H. H. Goddard, Vineland, N. J.

Colorado Medicine, Denver

April, XI, No. 4, pp. 145-178

56 History of Medicine and Its Relation to Civilization. W. H. Crisp, Denver.
57 Recent Cases of Glandular Fever. H. B. Whitney, Denver.
58 Arrested Development of Cancer. G. A. Boyd, Colorado Springs.
59 Ludwig's Angina. T. J. Gallaher, Denver.
60 Traumatic Hysteria. E. Delehanty, Denver.
61 Present Status of Radium in Surgery and Medicine. W. W. Grant, Denver.

Delaware State Medical Journal, Wilmington

February, V, No. 3, pp. 1-26

62 Obscure Case of Meningitis Following Grippe and Ending in Recovery. W. Springer, Wilmington.
63 Early Diagnosis in Cancer of Breast. H. M. Thompson, Wilmington.

Journal of Kansas Medical Society, Kansas City

April, XIV, No. 4, pp. 131-170

64 Arteriosclerosis. L. F. Barney, Kansas City.
65 Upper Abdominal Diseases. R. C. Lowman, Kansas City.
66 What Is Solution of Cancer Problem? F. A. Harper, Pittsburg.
67 Abdominal Diagnosis and Roentgen Ray. E. H. Skinner, Kansas City.

Maine Medical Association Journal, Portland

April, IV, No. 9, pp. 1799-1840

68 Neisser Infection of Female Genitals in Relation to Pregnancy. E. B. Young, Boston.
69 Case of Intermittent Claudication with Roentgenographic Findings. W. P. Coues, Boston.
70 Bronchopneumonia in Children. A. H. Damon, Limestone.
71 Pernicious Anemia. Case Report. J. M. Sturtevant, Portland.

Medical Record, New York

April 25, LXXXV, No. 17, pp. 737-782

72 *Nutritive Significance of Different Kinds of Foodstuffs. L. B. Mendel, New Haven, Conn.
73 *Food from Standpoint of Energy. G. Lusk, New York.
74 *Results of Three Years' Clinical Work with New Antiserum for Cancer. W. N. Berkeley, New York.
75 Rôle of Exercise in Treatment of Visceroptosis, with Special Reference to System of W. Curtis Adams. S. S. Bradford, Montclair, N. J.
76 *Has Tuberculosis Death Rate Declined Recently? T. J. Mays, Philadelphia.
77 Comparative Study of Imaginative Powers in Mental Defectives. H. A. Knox, New York.
78 Recent Advances in Study of Pathogenesis of Cancer. M. J. Sittenfield, New York.
79 Value of Accurate Diagnosis in Disease. B. Robinson, New York.
80 *Tango-Foot. G. F. Boehme, Jr., New York.

72. Nutritive Significance of Different Kinds of Foodstuffs.—Foods, calories and energy are discussed fully by Mendel. He again emphasizes the fact that there are certain limitations in the application of the calorie idea in nutrition that are sometimes overlooked. It is not sufficient that a food material should give evidence of energy-yielding components in the laboratory of the food chemist. The energy must be available. Filter paper and cotton wool, finger-nails and hair, paraffin and wax, are instances of carbohydrate, protein and fat-like products; but inasmuch as they cannot be digested and absorbed by man the calories which they yield in the laboratory can never be put at the service of the organism. Physiologic analysis must supplement the conventional tests of the chemist whenever innovations in articles of diet are proposed. Mendel speaks at some length of widespread misconceptions and bias in respect to foods to emphasize points alluded to by him.

73. Food from Standpoint of Energy.—Nature, through the device of appetite, Lusk says, usually provides against the use of wrong food. A man who leads a life of sedentary occupation requires 2,500 heat units or calories to maintain his body machinery. He needs also water, salts, proteins and certain newly discovered substances called vitamines. All these materials are to be found in milk, beans, bread and other great fundamentals of nutrition. He will not take solutions of cane-sugar or of glucose as the exclusive mainstay of his life. Yet glucose taken alone yields 2,500 calories at a cost of 4⅙ cents, and 2,5000 calories in the form of cane-sugar costs 8⅓ cents. Glucose is the cheapest food fuel known, but like cane-sugar or butter fat, is not a complete food, in that it does not contain everything necessary for life. Commercial glucose is absolutely harmless. A man must have sufficient calories in his diet if he is to live properly and perform labor satisfactorily.

74. **New Antiserum for Cancer.**—To gain a sufficient and convincing clinical experience Berkeley has used his serum on patients with many kinds of malignant tumors, and in all clinical and pathologic stages. Out of 104 patients seen only 15 were turned away as being too far advanced to give reasonable hope of at least temporary relief. The serum has been given in doses of 5 to 50 c.c., intravenously and subcutaneously at intervals of a few days. It has been used in most cases unmodified except by inactivation.

The first report on the preparation of this serum was abstracted in THE JOURNAL, March 30, 1912, p. 976. The serum is best given in ascending doses intravenously. When this method is badly borne, intramuscular injections will be found to work almost as well. As in the case of all therapeutic sera, immunity develops (anti-antitoxin) generally after six or eight injections. Though there have been some happy exceptions to this rule, the indications are that a cancer which cannot be cured by six or eight maximum injections will not be amenable to the serum treatment. Clinically this confines the serum treatment to: (1) The destruction of microscopic remnants left after a primary operation; (2) the production of immunity to cancer in persons not yet clinically ill of the disease but threatened with it; *e. g.*, cases of leukoplakia lingua, old ulcer of the stomach, bad cervical tears, chronic uterine inflammation, persistent mastitis; (3) a very few early and localized recurrences will probably be curable.

Eighty-nine cases were regularly undertaken. None of the cases classed as inoperable have been cured, but from the point of view of the research the results are of prime importance. Over two-thirds of them made a favorable response for a time; only six or eight entirely failed. Of thirty-nine cases treated with autogenous or stock serum (or both) after primary operation there have been seven failures. Of the successful cases the time elapsed since operation is two years, one year and eleven months, two years and two months, two years and five months, two years and eight months, two years and one month, two years and nine months.

76. **Has Tuberculosis Death-Rate Declined Recently?**—This question is answered in the negative by Mayo who analyzed Hoffman's statistics with reference to that point. He says that if one thing stands out more prominently than another in this whole investigation it is the uniform and overwhelming evidence that the present prevention crusade is not only a failure as a prophylactic measure, but really a provoker of the disease, inasmuch as the aggregate figures plainly show that its death-rate was 11.22 per cent. higher at the end of ten years than it was at the time when the crusade began.

80. **Tango-Foot.**—A number of dancers have consulted Boehme complaining of "pain in the front of the foot," and in every instance he has found the same symptom-complex—and on investigation discovered the cause constant—the modern dance. The patient generally awakes in the morning with a slight dull pain in the outer anterior aspect of the leg in its lower third. At first it is regarded as a slight bruise or a "little rheumatism." During the next few days the pain becomes more marked and a stiffness in flexion and extension of the foot is noted. Going up and down-stairs is painful, especially the latter. Over the region of the tibialis anticus tendon pressure produces a slight degree of tenderness. With the hand over this painful area, extension and flexion of the ankle is made and the typical crackling feeling of a tenosynovitis is noticed. The latter day dances, especially the tango and the maxixe, and to some extent the complicated figures of the hesitation waltz call for great flexibility of the ankle, with much movement at this point throughout the various intricate steps. The more common movements are those of extension, flexion, and adduction of the foot. The resultant is a constant strain on the extensor muscles of the foot, viz., the tibialis anticus, the extensor longus digitorum, and the extensor proprius hallucis, which in turn produces a tenosynovitis in this muscle group. The commonest tendon involved is that of the tibialis anticus.

Rest is the first requisite in treatment. Immobilization with plaster of Paris or with adhesive plaster does no good; in fact the pressure irritates, limits walking, and causes needless stiffness. Simple cessation from dancing is all that is necessary, with a limitation in the amount of walking done. For the simpler cases massage with alcohol or simple soap liniment is sufficient. Boehme has also had quick results from the use of a mixture of aconiti and belladonna tincture 1 part each and iodin two parts.

New York Medical Journal

April 18, XCIX, No. 16, pp. 761-812

81 *Operative and Post-Operative Treatment of Appendicitis. P. Syms, New York.
82 Operative Mortality in Appendicitis. M. S. Kakels, New York.
83 Association of Systemic Disease with Metastatic Ophthalmia. G. O. Ring, Philadelphia.
84 Purse-Stringing of Small Intestines into Distance of Fifty Centimeters. I. O. Palefski, New York.
85 Cardiospasm with Dilatation of Esophagus. Report of Five Cases. M. E. Smukler, Philadelphia.
86 Lymphosarcoma. H. Smith, New York.
87 Two Present-Day Fads. The Cold Bath and Sleeping Porch. A. M. MacWhinnie, Seattle, Wash.
88 Marked Improvement in Tabes. V. Kenerson, Buffalo.
89 Ventilation. J. B. Todd, Syracuse.

81. **Treatment of Appendicitis.**—Surgeons, Syms says, agree that operating in the chronic or interval cases, in the early hours of acute cases, and in the very late stages is a safe procedure, but they are not agreed on the method and manner of operating. There are two or three factions; one believes in a quick definite procedure—removing the appendix and stopping the leak, thus removing the cause; making provision for drainage, inflicting as little shock and traumatism as possible, and depending on Nature to work out a cure, the cause of the trouble having been removed—every effort being made to avoid disseminating, or rendering general a localized process. The other factions, however, attempt to supplant Nature by art, and they inflict an undue amount of traumatism. They endeavor to cleanse the entire peritoneal cavity by washing, flushing, scrubbing, sponging, etc.

Surgeons are not agreed as to the best time for operating in acute cases. Syms believes in immediate operation. He would like to operate in all acute cases in the first twenty-four hours, but unfortunately we do not see these cases at that time, as a rule. Most of the acute cases come late. He does not agree with Ochsner and Stanton that all cases of appendicitis are localized at first. Many of his cases of fulminating appendicitis had spreading peritonitis from the beginning, which became progressively more and more generalized. He does agree with Ochsner that we should withhold from these patients drugs, cathartics, and food; but he also believes that we should remove from these patients a gangrenous, perforated, leaking appendix at the earliest possible moment. The method of operating is a most important factor in determining the mortality rate; the time of operating is not so important a factor as Ochsner was led to believe. Prompt operation is safer for the patient than delay at any stage of the disease.

Ohio State Medical Journal, Columbus

April, X, No. 4, pp. 193-262

90 Estimate of Value of Wassermann Reaction to General Practitioner. U. J. Wile, Ann Arbor, Mich.
91 Experiences with Heath Mastoid Operation. F. A. Leslie, Toledo.
92 *Clinical Value of Bacteriologic Study of Blood. C. L. Cummer, Cleveland.
93 Prevention of Infantile Paralysis. F. G. Boudreau, Columbus.

92. **Bacteriologic Study of Blood.**—The points emphasized by Cummer are: In typhoid, blood cultures are the diagnostic method of choice in the first week and are of equal value with the Widal reaction in the second week. In pneumonia, we are as yet unable to draw conclusions regarding the significance of a pneumococcemia. Further investigation of this condition is clearly demanded. In otitis media, a bacteriemia is a danger sign of distinct value. In acute and subacute endocarditis, the isolation and identification of the causative organism from the blood-stream should be of aid in prognosis. The study of the bacteriology of the blood is of inestimable aid in the differential diagnosis of obscure febrile conditions.

Ophthalmic Record, Chicago

April, XXIII, No. 4, pp. 163-216

94 Clinoscope as Guide to Operative Eye-Work. F. B. Eaton, Portland, Ore.
95 Operative Treatment of Muscular Imbalance. J. L. McCool, Portland, Ore.
96 Nature of Trachoma. W. H. Crisp, Denver.
97 Treatment of Trachoma. C. H. Dewey, Washington, D. C.
98 Sclero-Corneal Trephining as Taught by Elliot. E. Jackson, Denver.
99 Oculist as Interior Decorator. O. Wipper, Chicago.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

April 11, I, No. 2780, pp. 801-844

1 *Three Years' Sanatorium Experience of Laryngeal Tuberculosis. S. Thomson.
2 *Tuberculin Treatment as Essential Method of Dispensing Sanatorium Benefit. W. C. Wilkinson.
3 Tuberculin as a Specific Cure. H. Sahli.
4 Tuberculosis of Kidney. J. M. Renton.
5 Surgery of Tuberculous Lymph-Nodes. A. Neve.
6 Multiple Subcutaneous Tuberculosis Following Circumcision Treated by Tuberculin. S. T. Champtaloup.
7 *Possibilities of Domiciliary Treatment in Phthisis. G. Jessel.

1. **Sanatorium Experience of Laryngeal Tuberculosis.**—More than half of the 178 cases of laryngeal tuberculosis treated by Thomson in the past three years—ninety-nine, in fact—were either arrested or improved during their stay. Thomson states that the larynx is frequently involved in pulmonary tuberculosis. Even in the selected cases sent to the sanatorium it is met with in 25.6 per cent. A considerable number of cases (102 out of 795) are sent to a sanatorium without their showing active tuberculosis. These cases, if included in statistics, would largely help to invalidate the foregoing conclusions. In patients of the middle class laryngeal tuberculosis may be met with as frequently in females (28.3 per cent.) as in males (24 per cent.).

Laryngeal tuberculosis occurs more frequently (13.7 per cent.) in the early favorable cases of Group 1 than is generally recognized. In the more decided cases of Group 2 this proportion is doubled (27.1 per cent.), and in the advanced cases of Group 3 it is trebled (40.8 per cent.).

The expectation of life amo[illegible] consumptives is markedly decreased by the complicatio[illegible] laryngeal tuberculosis. As a factor in prognosis the laryngeal condition deserves much more regard than it has hitherto commanded. Laryngeal tuberculosis may not infrequently be present, although the patient may make no complaint of the throat, and although the voice be unaltered. Hence the larynx should be carefully inspected in every case of pulmonary tuberculosis. Improvement in lung and larynx frequently, but not necessarily, progresses *pari passu*. In certain cases the larynx improves, while the lung retrogrades. The converse rarely takes place. Arrest of laryngeal tuberculosis can be effected in a sanatorium in 20.7 per cent. of all cases. Limited and slight laryngeal lesions, particularly in Groups 1 and 2, may become arrested spontaneously with sanatorium treatment. The galvanocautery is the best weapon at present for local treatment. It was only indicated in 20.22 per cent. of 178 cases and it completed the cure in 41.60 per cent. of the cases in which it was employed. These satisfactory results have not, so far as Thomson knows, been secured by any methods outside a sanatorium.

2. **Tuberculin Treatment of Tuberculosis.**—Wilkinson has little doubt that when the effects of tuberculin treatment in stages 1 and 2 of pulmonary tuberculosis have been carefully and impartially studied this method of treatment will come to be adopted as the essential method of treating the disease itself, so that the custom in vogue of sending the victims of tuberculosis to sanatoriums will be largely superseded by treatment in special dispensaries.

7. **Domiciliary Treatment in Phthisis.**—Domiciliary treatment of tuberculosis Jessel says depends for its success on careful attention to details. The problem is essentially one of hygiene rather than of therapeutics.

Dublin Journal of Medical Science

April, III, No. 508, pp. 241-320

8 *Case of Amyotonia Congenita. F. C. Purser.
9 Hypnotism. C. P. Smyly.
10 Case of Tuberculosis of Spine, with Pressure Symptoms on Cord. H. Stokes.

8. **Case of Amyotonia Congenita.**—The case cited by Purser differs from the majority of others described in the presence of nystagmus and the association with rickets. The patient was 2 years of age. The birth was natural, but there was severe post-partum hemorrhage. At the age of 15 months the child got severe diarrhea for four weeks. He became cross and restless. His belly swelled, and, later on, his chest got a queer shape. In fact, he had acute rickets.

The child made no attempt to stand, but he could sit up without support when he was helped into a sitting posture. If his body was bent forward he collapsed in a heap; if his head was bent backward or forward he had no power of getting it erect again. His spinal and abdominal muscles were fairly firm; they reacted briskly to faradic stimulation, and the abdominal reflexes were active. Swallowing, coughing and crying were vigorously performed. There was no sign of facial weakness. The limbs were extremely flabby and evenly small. All movements could be performed, but extension of the thigh was extremely feeble. The glutei were apparently the softest and feeblest of all his muscles. They contracted to faradic stimulation when it was strong. There were no polar changes. The movements of the arms were more frequent and of wider range and better than those of the legs. But they, too, were feeble, even when the child was angry. Occasionally a rhythmic tremor, about six or seven to the second, was seen in the arm used. There was extreme flaccidity and the joints were abnormally "loose." Purser says that this is the first case of the kind reported in Ireland.

Edinburgh Medical Journal

April, XII, No. 4, pp. 291-384

11 Nature and Treatment of Neurasthenia. T. A. Ross.
12 Milk Question in Edinburgh. A. P. Mitchell.
13 *Scrofula, or Hypersensitiveness to Tuberculous Infection; Its Relation to Abnormal Constitution (Status Lymphaticus). C. M'Neil.
14 Modern Treatment of Pulmonary Tuberculosis. D. M. Barcroft.
15 *Manifestations and Treatment of Intestinal Toxemia. D. C. Watson.

13. **Scrofula.**—Scrofula in M'Neil's opinion is something more than a variety of tuberculous infection. It depends on an abnormal constitution in which the body shows a hypersensitive reaction to various infective agents, including tubercle bacilli in a majority of cases. This abnormal constitution is that usually known as status lymphaticus.

15. **Treatment of Intestinal Toxemia.**—The aim of treatment in every case is summarized by Watson as follows: 1. To correct the abnormal bacterial activity in the digestive tract, attention being directed both to the small and large intestine. 2. To correct any associated or, it may be, primary toxemia existing in the upper part of the digestive tract, more especially the teeth, tonsils, gums and stomach. 3. To increase the functional activity of the main channels of elimination of the natural poisons of the body which in the cases in question are usually produced in excess. 4. To raise the general tissue resistance of the body by general means, attention being specially directed to improving the tone of the central nervous system. 5. In appropriate cases endeavor to raise the resisting power of the tissues by the use of vaccine.

Complete rest in bed is essential in the treatment of the majority of pronounced cases. In slight cases rest is unnecessary and inadvisable. Great care is called for in the selection of cases requiring complete rest.

Diet is of great value in modifying the bacterial flora in the bowel. The fermentation cases should be treated with a diet chiefly protein in character. The diet should comprise various meat soups, fish, chicken, eggs, tripe, sweet-bread and scraped beef, farinaceous foods being restricted to dry toast, stale bread and rusks. The diet must be carefully planned, the food given at regular intervals and no food of

any kind given between meals. The free use of plain water or other diluent should be encouraged. It is necessary to point out the importance of proper attention being paid to mastication of the food, to the state of the teeth and the careful regulation of the bowels, as essential points in the treatment. The putrefactive cases are treated with a partly vegetarian diet. Meat, and especially red meats, are for the time cut off from the dietary. Meat soups are similarly withheld. Eggs are also excluded. The diet should comprise bread and milk, farinaceous food, green vegetables and fruits. Patients who are specially prone to intestinal auto-intoxication have a relatively weak digestive power. Their diet must therefore be a simple one. All foods which are difficult to digest should be excluded from the dietary, and the various "extras" which can be indulged in with impunity by healthy subjects must be rigorously withheld.

In the mild cases all that is required for the bowels is a small dose of calomel—¼ to 1 grain each night for three or four nights—followed by a morning saline, given in amount sufficient to empty the bowel thoroughly, the bowels being thereafter regulated by adding a little fruit to the dietary, and by including, where possible, oatmeal, whole-wheat bread and vegetables, the drinking of plain water in the morning, and, when necessary, the regular use of such aperient as is found to suit the patient. The one Watson has found most generally useful is the old-fashioned senna pods used in the form of cold infusion. An enema of soap and water, the use of petroleum or liquid paraffin as a mechanical lubricant are recommended as being of value in many of these cases. An important point in the treatment consists in stimulating the functional activity of the kidneys. In the earlier stages of the disease hydrotherapeutic measures are of great value in treatment. Massage and exercise should be insisted on. The use of vaccines when carefully administered is of value in supplying the final stimulus required to enable Nature to overcome the effects of the poison. In cases which have proved intractable to medical treatment, and in which there is clear Roentgen-ray evidence of the existence of stasis, operation should be recommended.

Journal of State Medicine, London

April, XXII, No. 4, pp. 193-256

16 Poliomyelitis. R. Burnet.
17 Sexual Disease and Individual. A. Corbett-Smith.
18 French Public Health Service in Equatorial Africa. Conan.
19 Residential Open-Air Schools. D. M. Taylor.

Lancet, London

April 11, I, No. 4728, pp. 1017-1094

20 Morphology of External Genitalia of Mammals. F. W. Jones.
21 *Analysis of Problem of Minimal Lethal Dose and Its Relationship to Time Factor. G. Dreyer and E. W. A. Walker.
22 *Improved Methods of Standardizing Bacterial Vaccines in Hemocytometer Chambers. E. E. Glynn and Others.
23 Method of Increasing Accuracy and Delicacy of Wassermann Reaction. F. H. Thiele and D. Embleton.
24 Diabetic Retinitis. S. West.
25 Therapeutic Value of Potato. H. C. Howard.
26 Mortality on Rand: Some of Its Causes. B. G. Brock.

21. **Minimal Lethal Dose.**—The formula proposed by Dreyer and Walker is as follows: $\frac{1}{D_0 - a} - \frac{1}{D_1 - a} = k\,(T_0 - T_1)$ offers a simple means of making such measurements. In this formula D_0 and D_1 are the concentrations of the drug or "surface doses," corresponding to the time T_0 and T_1, in which the death of the animal (or other desired effect) occurs; a is a figure representing the "non-effective" dose of the substance employed, and k is a constant to be determined for the particular substance and species of animal under investigation. The formula states that to every equal increment in time there corresponds a definite decrease in the "active dose" (D—a). This formula is shown to afford a satisfactory expression for all the varied and diverse experimental data to which it has been applied.

22. **Standardizing Bacterial Vaccines.**—The most scientific method of enumerating the bacteria for vaccines is shown by Glynn and others to be in some form of hemocytometer chamber. An optically plane and rigid coverslip must be used with such apparatus, for it is recognized as essential when counting blood and is still more essential when counting bacteria, where accuracy is of greater importance. Owing to the small free working distance of oil immersion lenses most optically plane coverslips are too thick.

Two types of hemocytometer chamber may be employed: (a) The ordinary chamber 0.1 mm. deep, with an optically plane coverslip 0.13 mm. thick. This is suitable for all oil immersion lenses with a free working distance of 0.17 mm. and some of 0.15 mm. (b) A chamber 0.02 mm. deep, with a special safety trench 2.5 mm. wide and optically plane coverslip 0.18 mm. thick. This is suitable for all achromatic oil immersion lenses, even if the free working distance is as low as 0.09. The 0.02 mm. chamber is much superior for the following reasons: (a) Almost all the bacteria settle at the bottom in fifteen minutes, when accurate counts can be made, whereas in the 0.1 mm. chamber a considerable number are still moving after half an hour. (b) Bacteria adhering to the under surface of the coverslip or still floating in the chamber are more easily enumerated. (c) The optical definition of the bacteria is better owing to the smaller quantity of fluid. (d) The free working distance is greater, and the coverslip being 0.18 mm. thick, is more durable. (e) Counting is quicker owing to the much smaller number of moving bacteria and the greater ease in focusing the top and bottom of the chamber.

A weak solution of carbol thionin is the best diluting and staining fluid; unlike a weak solution of Giemsa it is quite free from precipitate and stains more intensely. Enumeration of stained bacteria in a hemocytometer chamber, particularly in one 0.02 mm. deep, is more rapid and much more accurate than by Wright's method. The hemocytometer method does not underestimate the strength of the bacterial emulsion as usually happens with Wright's method, sometimes to a very serious extent.

Annales de Gynécologie et d'Obstétrique, Paris

March, XLI, No. 3, pp. 129-192

27 Treatment of Ophthalmia Neonatorum. V. Morax.
28 *Transfusion of Blood to Supplement Hysterectomy for Rupture of the Uterus. C. Sauvage.
29 Breech Presentation. ([illegible] raction du siège d'après Deventer-Mueller.) R. de Tré [illegible]
30 Cesarean Section; Twelve Cases. Ferré.

28. **Transfusion of Blood After Removal of Uterus Ruptured During Delivery.**—Sauvage relates the particulars of a case in which he combated the shock from the rupture, the great loss of blood and from the hysterectomy by transfusion of blood from the woman's husband. In three minutes after the transfusion was begun the radial pulse began to appear and rapid and complete convalescence followed.

Annales de Médecine et Chirurgie Infantiles, Paris

April 1, XVIII, No. 7, pp. 213-248

31 Acute Appendicitis in the Course of Varicella; Three Cases. E. Perier.
32 Tic of the Scapula. Nageotte-Wilbouchewitch.
33 Suture of Ulnar Nerve. (Section du nerf cubital chez un enfant. Suture.) P. Lombard.
34 *Acute Nephritis in Children. J. Renault and G. Siguret.

34. **Acute Nephritis in Children.**—Renault and Siguret think that bed rest and an exclusive milk diet are all that is needed in mild cases. When symptoms develop showing that the kidneys are becoming less permeable to salt and urea, diuresis should be promoted and the congestion in the kidney reduced by dry cupping, repeatedly applied, in Petit's triangle. In the severer cases and with older children venesection is sometimes preferable, or wet cupping in the lumbar region or leeches to each kidney. Moist heat to the chest is often effectual in relieving congestion of the kidneys; it is left in place for fifteen or twenty minutes, repeated every three or four hours. They advise against revulsion by mustard pastes, etc., but have often found useful in the threatening cases a full bath at 38 C. for fifteen minutes when there were no contra-indications on the part of the heart. A wet cloth should be kept on the head during the bath.

Drugs to act on the kidneys are too much of a strain for them; diuresis is best promoted by reducing intake of salt and of water. If this is not enough, a cold enema might be given every hour, and decoctions of onions, cherry stalks, or grape juice in small quantities, are often useful adjuvants. Calcium chlorid may help; 0.2 gm. a day for each year of age, but if it does not benefit promptly it should be dropped after a few days. Nothing but sugars can be given to promote elimination of nitrogen, they say, suggesting 10 to 50 gm. of lactose in the beverages during the day. Also subcutaneous or intravenous injection of 200 or 250 c.c. of a 45 per thousand solution of glucose. The bowels and the skin should be stimulated, but they say that calomel and pilocarpin are directly contra-indicated.

Nothing but water and little of that should be allowed the first two days, then unsalted gruels, gradually adding a little milk, finally giving nothing but milk, and no more than 1.5 liter in the twenty-four hours, and always warm, sweetened or not as desired, fractioned every three hours from 8 a. m. to 8 p. m. The mouth should be rinsed out afterward with an alkaline fluid each time. After a time other food can be added but always without salt and with minimal nitrogen. If there is no sign of edema by the end of a month, a little salt can be allowed. Other important elements in treatment are repose in bed, constant warmth and scrupulous disinfection of the throat and nose every day. In case of convulsions lumbar puncture may prove useful.

Archives de Médecine des Enfants, Paris

April, XVII, No. 4, pp. 241-320

35 Necessity for Removing Infant at Birth from Tuberculous Familial Environment. P. Nobécourt and G. Schreiber.
36 *Acute Leukemia in Children. M. Péhu and G. Chalier.
37 *Recurrence of Scarlet Fever. G. Jacobson.
38 Child Welfare Work in Brazil. (Protection de l'enfance au Brésil.) Moncorvo, Jr.
39 Children's Asylum at Stockholm. E. Lesné and C. Richet, Jr.
40 Varicella Contracted at Birth from the Mother. P. Lereboullet and I. Moricand.
41 Spastic Paraplegia in Boy of 8 with Inherited Syphilis. Deléarde and Cantrainne.

36. **Acute Leukemia in Young Children.**—The blood-picture in the girl of 3 and boy of 2 was not of the classic type in either, but the general health became bad and the spleen much enlarged. Toward the end ascites and edema developed and the liver became enlarged while there was suppuration in one tonsil in the first case but no hemorrhages nor enlargement of lymph-nodes. The girl died in less than three months after the first symptoms; the disease in this case might be defined as a myeloid subleukemia with rapid course. The boy presented typical acute leukemia and had no hemorrhage nor fever to speak of, but the edema was extreme, invading the face and legs; probably pressure from the numerous enlarged lymph-nodes contributed to this; the spleen was also very much enlarged; death occurred in four months. The blood-count indicated an intense myeloid reaction and the eosinophils numbered 25 per cent. The case had features which suggested that it was a transitional form between true and pseudoleukemia. Arsenic was given the children and several Roentgen-ray sittings; the spleen became somewhat smaller, but the results on the whole confirmed the inefficacy of all our measures for treatment of acute leukemia. The first symptoms in the first case were the increasing size of the abdomen; the child seemed to suffer from it and was pale and languid. In the other case the enlargement of the lymph-nodes in the neck, pallor and loss of appetite were the only symptoms noticed by the family for three or four weeks.

37. **Recurrence of Scarlet Fever**—Jacobson reports that a family of four children had scarlet fever in 1908 and 1911. Over a year later he was called to attend the children for scarlet fever anew, each one of the four having a typical attack. The second attack was more serious than the first in all, and the 8-year-old girl died from it with signs of myocarditis.

Archives Générales de Chirurgie, Paris

March, VIII, No. 3, pp. 257-384

42 Congenital Fistula of Upper Lip. A. Parcelier and A. Lacoste.
43 *Grafts to Close Defects in Skull. (Greffes craniennes.) P. Mauclaire.

43. **Skull Grafts.**—Mauclaire reviews the various methods in vogue for repairing defects in the skull and then gives the details of two cases of traumatic injury and one of congenital occipital meningocele. In the first traumatic case the gap was 5 cm. in each direction, with considerable protrusion of brain tissue. He implanted a flap of fascia and on top of this the lower corner of the scapula. The bone implant did not close the defect entirely and a fistula developed. The traumatic brain tissue hernia was improved by the operation, as the fascia flap held, but the cure was not complete. In the second traumatic case he implanted a flap of fascia lata which healed well in place but Jacksonian epilepsy developed and he incised the implanted fascia lata and found subjacent adhesions to the meninges which he separated and implanted a sheet of tissue cut from the hernial sac of another patient known to be healthy. He then sliced from the patient's tubercle of the ilium a sheet of bone and periosteum which fitted perfectly in the gap, after freshening the edges. The injury had been from a gunshot wound in the temporal region. The graft healed in place and after the fourth day following the intervention the patient had no further traces of epilepsy. The tubercle of the ilium seems particularly adapted for grafts as five or six flat or curved sheets of bone-tissue can be sliced from it without injuring the sacro-iliac articulation. By cutting slices on each side enough bone might thus be obtained to repair a defect as large as the palm of one's hand. Mauclaire thinks that bone grafts are preferable to any other material for the purpose. In this case of meningocele he obtained the bone and cartilage graft from the child's greater trochanter.

Bulletin de l'Académie de Médecine, Paris

March 24, LXXVIII, No. 12, pp. 415-489

44 *Importers of Tropical Germs. L. Landouzy and R. Debré.
45 Chemistry of the Urine in Cancer. (L'acide urique et les corps puriques chez les cancéreux.) A. Robin.
46 *Congestion of the Peritoneum. (Congestion péritonéale d'origine appendiculaire.) Mignon.
47 *Experimental and Therapeutic Study of Emetin. E. Maurel.

44 and 46. Summarized in Paris Letter, p. 1267.

47. **Emetin.**—Maurel remarks that thirty communications have been recently published bearing on emetin hydrochlorid in treatment of dysentery, ameba liver disease, and hemorrhages from the intestines, stomach or lungs. These results confirm his experimental research with it long ago undertaken to confirm C. Bernard's laws that toxic and medicinal substances act, not on organs, but on systems of tissue; that each has one elective anatomic element; and that this electivity is manifested throughout the animal series. Emetin acts electively on the smooth fibers, and particularly on those in the blood-vessels, causing them to contract. This contraction explains the influence of emetin on hemorrhage as it induces vasoconstriction. The contraction of the smooth fibers under the action of emetin helps to reduce congestion and inflammation in a region. In all cases of local congestion the contraction of the vessels aids in restoring normal conditions especially in bronchitis, pneumonia, emphysema, etc.

Bulletins de la Société de Pédiatrie, Paris

March, XVI, No. 3, pp. 117-196

48 *Experimental Research on Dietary Deficiency Diseases. (Note pour servir à l'étude des troubles provoqués par une alimentation exclusive.) E. Weill and G. Mouriquand.
49 Tic of the Scapula. (Surélévation de l'omoplate gauche. Tic d'attitude ou tic tonique.) L. Lamy.
50 *Danger of Injections of Witte Peptone in Familial Hemophilia. P. Lereboullet and E. Vaucher.
51 *Foreign Bodies in Upper Air Passages of Young Children. M. Guisez.
52 Wassermann Reaction in Infant's Blood; Negative in the Mother. Cassoute.
53 Gangrene of the Foot in Diphtheria. V. Veau and Weber.
54 Diagnosis of Pericarditis with Effusion. Guinon and Malarte.

48. **Dietary Deficiency Disturbances.**—Weil and Mouriquand have been feeding a number of pigeons since last July exclusively on one kind of grain, rice, barley, wheat or corn, comparing the condition of these pigeons with that of others on an ordinary pigeon diet. Those fed on polished rice

developed typical beriberi and almost identical disturbances were displayed by the pigeons fed exclusively on barley. They think that everything tends to show that the trouble is due more to the exclusive, one-sided diet than to any special toxic element, and that the facts observed throw light on the pallor, weakness and dyspepsia in infants fed too exclusively with any one substance.

50. **Danger from Peptone Treatment of Hemophilia.**—Nolf and others have reported that the coagulating time was materially shortened in a number of cases of hemophilia in which Witte peptone had been injected into a vein. Encouraged by this, Lereboullet and Vaucher applied the same measure to a child of 7 with severe familial hemophilia. The injections were borne at first without by-effects, but then symptoms of serious intolerance followed, with profuse hemorrhages, speedily fatal.

51. **Foreign Bodies in Esophagus or Air Passages of Young Children.**—Guisez reports eleven cases and insists on the difficulty of determining whether the foreign body is in the gullet or windpipe, spasm of the glottis frequently complicating the picture. This occurred in three of his cases when the foreign body was in the esophagus. The children coughed and seemed to be suffocating, and tracheotomy was done in one case. The safety-pin was not found and it was voided later with the stools. The dyspnea and cough at first are instructive; later the air passages may become tolerant of the foreign bodies. He is convinced that many children die from the effects of an unsuspected aspirated foreign body when the trouble is supposed to be ordinary bronchitis or pneumonia. In one case a child coughed up a fish scale which had been the unsuspected cause of a four-months' siege of bronchitis. In another case the nurse knew that the child had swallowed a foreign body and coughed incessantly for a time, but it was assumed that the foreign body would be expelled by the bowels and no one connected it with a pulmonary trouble which developed soon after. Several physicians examined the child and tuberculosis was suspected, but at the eighteenth month the child coughed up the foreign body and its lung trouble ceased at once.

The family always say that the child has "swallowed" the foreign body, but if there was any immediate suffocation this should suggest its presence in the windpipe rather than the gullet, especially when there was a spasmodic cough and attacks of suffocation recurred at first. The witnesses of the accident are liable to push the foreign body farther down, past the glottis, in their efforts to extricate it. Guisez took a penknife from the bronchus in one case and a bone in another; the foreign bodies had lodged in the throat and as a member of the family tried to seize the foreign body with his finger, he pushed it past the glottis. In only 50 per cent. of his total fifty-two cases of foreign bodies in the air passages were the Roentgen-ray findings reliable. Only metal bodies or bone cast a shadow, and the foreign body may change its place at each cough. His youngest patient was 3 months old. Broncho-esophagoscopy has materially reduced the mortality and will still further reduce it as it is more widely used and the technic perfected. Köhler's statistics up to 1910 gave a mortality of 90 per cent., but Jackson reported last year a mortality of only 5 per cent. in 171 cases.

Journal de Chirurgie, Paris

March, XII, No. 3, pp. 281-424

55 *Technical Point in Removal of Rectum by Abdomino-Perineal Route. B. Cuneo.
56 *Traumatic Fat Embolism. J. Tanton.
57 Exclusion of Pylorus by Biondi's Technic. S. Porta.

55. **Removal of the Rectum.**—Cuneo shows by diagrams that ligation of the inferior mesenteric artery as high as possible materially facilitates drawing down the rectum to the incision in the perineum, while it seems to be entirely feasible and harmless. He has done this operation ten times. In five cases he made an abdominal artificial anus and three of the patients died. In the other five cases he fastened the bowel to the anus or just back of it, and all in this group recovered.

56. **Traumatic Fat Embolism.**—Tanton reviews the history of this subject, the pathogenesis of fat embolism, symptoms and treatment. The diagnosis is based on the dyspnea, rise in temperature, brain disturbances and the lipuria, but these symptoms are seldom all present. Roux thinks that a retarded pulse with accelerated respiration speak strongly in favor of fat embolism. Benestad noticed small purplish spots on the skin of the shoulders, chest, abdomen or front of the thighs in his five cases of fat embolism after fracture, and others have noticed these petechiae on the mucosa and conjunctiva. Fat embolism in the lungs might be mistaken for pneumonia, and in the brain might be ascribed to shock or pressure on the brain from a hemorrhage. The symptoms are seldom fulminating as is liable with blood embolism; as a rule in the fatal cases death does not occur for five or six hours, or days may elapse. The fat embolism may not develop until some time after the fracture—two weeks in Groubé's case. As there is so little that can be done in treatment of fat embolism, measures to ward it off are particularly imperative and chief among these the search for atrophy of the bone when it is a question of correcting an ankylosed joint. Roentgenoscopy will reveal whether there is atrophy of the bone at any point in the skeleton. If such is found the reduction of the stiff joint should be done very slowly and gradually, avoiding any sudden crushing of the bone. It is important not to treat more than one joint at a time, and also to do the correction before the bone has developed fatty osteoporosis. Immobilization of the fracture is a further factor in prophylaxis; the urine should be examined for fat every day, especially after a severe fracture.

In case of lipuria and trouble in breathing, he advises opening the fracture and removing the blood and fat accumulated there, hoping thus to arrest or reduce the absorption of fat. Wilms and Gröndahl regard the thoracic duct as the main source of absorption for the fat and suggest that a temporary fistula might divert the fat away from the circulation exposing the thoracic duct in the subclavicular fossa and inserting in it a cannula, left in place for one or three days. Wilms has reported a case in which he successfully applied this measure; the patient had developed subcoma twenty hours after fracture of the radius, with difficulty in breathing, and Wilms made an incision into the thoracic duct. Lymph poured out in abundance, containing numerous droplets of fat easily distinguishable from the granules of fat in the chyle. He kept the fistula open for four days when the condition improved and complete recovery soon followed. The fistula healed spontaneously in eight or ten days. For this operation to be effectual, the fat embolism must be diagnosed early and positively, which is rarely the case; the dyspnea, rise in temperature and brain disturbances are generally attributed to other causes.

Journal de Médecine de Bordeaux

March 22, LXXXV, No. 12, pp. 189-202

58 Electricity in Treatment of Deranged Metabolism. (L'ergothérapie passive par la faradisation généralisée. E. Spéder.

March 29, No. 13, pp. 205-226

59 Direct Connection between Certain Parts of the Liver and of the Intestinal Tract. (Sur les rapports fonctionnels des formations lobaires hépatiques et des divers segments du tube gastro-intestinal. Leur rôle en pathologie.) P. Mauriac and H. Sérégé.

Journal d'Urologie, Paris

March 15, V, No. 3, pp. 249-392

60 True Pathologic-Anatomic Findings in the Kidneys. (L'histopathologie fine du rein chez l'homme.) M. Chevassu and F. Rathery.
61 Subcapsular Nephrectomy; Three Cases. R. Molla.
62 *Nascent Iodin Fumes in Treatment of Tuberculous Processes in the Bladder. (L'enfumage iodé.) J. N. Normand.
63 Cure of Inoperable Urethrovaginal Cancer in Woman of 26 under Radium; No Recurrence for Two Years to Date. F. Legueu and Chéron.
64 Indications and Technic for the Transvesical Operative Treatment of Vesicovaginal Fistulas; Six Cases. J. Paris and F. Francey.

62. **Nascent Iodin Fumes in Treatment of Tuberculous Process in the Bladder.**—THE JOURNAL described, 1912, LIX, 488, with an illustration, the method of generating nascent iodin by gently heating iodoform and pumping the fumes directly into the organ or passage requiring treatment. Nor-

mand here relates his experiences with the method in twenty-four cases last year, with a total of 114 sittings or *enfumages*. During the current year he has applied it to 16 other patients, with 116 sittings. He regards the method as indicated in all primary or secondary tuberculous bladder affections except during acute exacerbations. He declares that the method is superior to all others for this purpose; it improves and soothes and seems harmless. The capacity of the bladder increased in about 50 per cent. of the cases, but incontinence did not show any improvement. In the majority of the cases the benefit was prompt and striking. The bladder need not be rinsed out beforehand unless it is much contaminated, and only plain boiled water should be used. About 0.05 or 0.1 c.c. of the iodoform is heated, and when the violet fumes issue from the tip of the cannula the alcohol lamp is set aside and the fumes are pumped into the bladder, stopping when the patient shows signs of pain or a desire to urinate. The fumes are retained in the bladder for from half a minute to two minutes. The sittings are given once or twice a week. The heat must be gentle, and if the iodoform is impure or impaired by exposure to the air or moisture, the nascent iodin vapor is correspondingly unreliable.

Presse Médicale, Paris

April 4, XXII, No. 27, pp. 253-264

65 *Advantages of Tansini's Technic for Amputation of the Breast for Cancer. M. Guibé.
66 Local Anesthesia for Phimosis Operation. M. Saissi.

65. **Amputation of the Breast.**—The last communication from Tansini on his technic for radical removal of the cancerous breast was summarized in these columns Dec. 13, 1913, p. 2202. Guibé here gives an illustrated description of it and says that experience is showing that the objections theoretically raised against the method are proving baseless in practical experience. It aims to remove the skin in the region more thoroughly and extensively than other technics, at the same time supplying an adequate substitute by twisting a skin flap around from the back.

Semaine Médicale, Paris

April 8, XXXIV, No. 14, pp. 157-168

67 Fracture of the Scaphoid Bone. (Les fractures du scaphoide tarsien.) F. Lejars.

Beiträge zur klinischen Chirurgie, Tübingen

February, LXXXIX, Nos. 2-3, pp. 291-708

68 *Treatment of Diffuse Suppurative Peritonitis. J. Grekow.
69 *Operative Treatment of Traumatic Injury of the Heart. (Zur Frage der traumatischen Herzchirurgie.) H. Zeidler.
70 The Streptococcus Group and Vaccine Therapy. A. Berdnikoff.
71 Serotherapy and Vaccine Therapy in Surgical Gonorrheal Disease. B. Cholzoff and T. Gramenitzky.
72 Pathologic Anatomy and Histology of Suture of Veins. E. Hesse and W. Schaack.
73 Technic for End-to-Side Anastomosis of Vessels. N. Dobrowolskaja.
74 Traumatic Separation of the Epiphysis. E. Klopfer.
75 Salvarsan Therapy in Surgery. G. Iwaschenzoff and W. Lange.
76 Fascia Flap to Close Defect in Dura. W. Lawroff.
77 Roentgen-Ray Diagnosis of Suppurative Processes in the Thorax. O. v. Dehn.
78 Wounds of the Abdomen. (301 perforierende Stichverletzungen des Abdomens, 1902-1912.) M. Magula.
79 Experimental Study of Best Treatment for Peritonitis. F. Pikin.
80 Paratyphoid Peritonitis. G. Petraschewskaja.
81 Treatment of Appendicitic Peritonitis. N. Boljarski.
82 Treatment of Perforated Gastric and Duodenal Ulcer. G. Petraschewskaja.
83 Experimental Study of Compensatory Phenomena after Resection of Intestine. B. Stassoff.
84 Injuries of the Liver; 109 Cases. N. Boljarski.
85 Experimental Study of Digestion and Absorption of Different Foodstuffs with Abnormal Admixture with Bile in the Digestive Apparatus. H. Wiedemann.
86 Experimental Transplantation of the Papilla of Vater. H. Wiedemann.
87 Stab Wounds of the Gall-Bladder. (Stichverletzungen der Gallenblase.) H. Wiedemann.
88 Frequency of Gall-Stones among 17,402 Cadavers. E. and M. Hesse.
89 Technic for Repair after Stab Wound of the Spleen. (Zur Chirurgie der Milzstichverletzungen unter bes. Berücksichtigung der isolierten Netztransplantation.) B. Stassoff.
90 Tests of Functional Capacity with Surgical Disease of the Kidney. S. Liokumowitsch.
91 Treatment of Rupture of Kidney from Contusion; Fifty-Seven Cases. S. Ponomareff.
92 Intraperitoneal Rupture of the Bladder. N. Dobrowolskaja and H. Wiedemann.

68. **Suppurative Peritonitis.**—All the twenty-five communications in this double number of the Beiträge are from the great Obuchow hospital at St. Petersburg. Grekow, the chief of the surgical service, opens the list with an analysis of 902 operative cases of diffuse peritonitis during the last twenty years. The mortality varied according to the cause, but it averaged 63.3 per cent. He never witnessed any benefit from pouring oil, with or without camphor, into the abdominal cavity but was quite encouraged by the stimulating action of 500 c.c. of a 5 per cent. solution of grape sugar which was poured into the abdominal cavity and allowed to drain away. A hypertonic salt solution answers the same purpose; both induce copious secretion in the abdominal cavity and thus cause an autoflushing of the peritoneum, as is were, while it renders the pus more fluid. Oil, on the other hand, seemed to favor adhesions and mischief generally. No benefit was observed from vaccine or serotherapy, but a certain favorable influence was apparent after intravenous injection of a 0.1 per thousand solution of silver nitrate. The high mortality in his material was due to the late stage in which the patients were first seen as a rule.

69. **Operative Treatment of Wounds of the Heart.**—Zeidler states that nine of the thirty-one patients recovered after suture of the heart at the Obuchow hospital. He thinks this is the longest series of such cases yet reported from any one institution. A number of the patients have full earning capacity to date, from two to over seven years since the operation. He describes the usual technic in detail and ascribes the fine outcome in some cases to his prophylactic resection of part of the chest wall—cardiolysis—to prevent adhesions and the rigid wall hampering the work of the heart.

Berliner klinische Wochenschrift

April 6, LI, No. 14, pp. 629-676

93 Headache and the Eyes. (Kopfschmerz und Auge.) A. Jess.
94 Squint and Headache. (Höhenschielen und Stirnkopfschmerz.) E. A. Heimann.
95 *Nutrient Enemas after Operations on Stomach and Esophagus. (Rectalernährung nach Operationen im Munde und im Schlunde.) G. D'Agata.
96 *The Prognosis for General Anesthesia. W. Stange.

95. **Nutrient Enemas.**—D'Agata states that in Ceci's surgical service at Pisa there has been no instance of aspiration pneumonia during the five years since operations on the mouth or esophagus have been systematically done under local anesthesia or as the patient is recovering from general anesthesia, the head pendant. The patient is then kept in bed, sitting up, for twenty-four hours, and gets up the next day. For a period of ten to fourteen days nourishment is given exclusively by way of the rectum. This latter precaution is chiefly responsible, he thinks, for the freedom from post-operative foreign body pneumonia; the patients do not seem to suffer materially from inadequate nourishment during these two weeks. He gives the metabolic findings in two of the patients to sustain these assertions and demonstrate the absorption and assimilation of nutrient materials from the rectum, and the comparatively small amount rejected and cast off in the stools. The absorption of carbohydrates was approximately normal; less good of nitrogenous substances and least of all of fat.

96. **Prognosis for General Anesthesia.**—This article was summarized as it appeared elsewhere. (See abstract 158, p. 1132.)

Correspondenz-Blatt für Schweizer Aerzte, Basel

March 21, XLIV, No. 12, pp. 353-384

97 *Paracelsus in Switzerland. A. Burckhardt.

March 28, No. 13, pp. 385-416

98 Hour-Glass Stomach. (Sanduhrmagen nach Ulcus der kleinen Kurvatur.) L. Gelpke.

April 4, No. 14, pp. 417-448

99 Pernicious Anemia and Uncontrollable Vomiting Cured by Induction of Abortion; One Case Each. A. Goenner.

97. **Paracelsus.**—Burckhardt has recently found among the archives of the university of Basel, Switzerland, records of Paracelsus having been a professor and city physician there during 1527 and at an unusually high salary for those days. But the faculty refused to accept him as a regular member

and he was never given license to practice there. No record has been found anywhere of his having actually completed his medical course, although he had studied at various medical schools and done surgical service on the battlefield.

Deutsche medizinische Wochenschrift, Berlin

April 2, XL, No. 14, pp. 681-736

100 *Treatment of Incarceration of Pregnant Uterus. P. Jung.
101 *Resection of Ribs Close to Spine and Sternum as Means to Cure Old Processes' in the Lungs and Pleura. (Behandlung der Empyeme und der lange bestehenden tuberkulösen Pleuraexsudate mit der Pfeilerresektion.) M. Wilms.
102 *Paravertebral Hypostatic Pneumonia in Infants. A. Czerny.
103 *Bacteriologic Findings with Friedmann's Remedy. (Beitrag zur bakteriologischen Kenntnis des Friedmannschen Tuberkulosemittels.) L. Rabinowitsch.
104 History and Technic of Radiology of Duodenum. O. David.
105 Influence of Splenectomy on Pernicious Anemia. A. v. Decastello. Commenced in No. 13.
106 The Spirochetes in the Brain in General Paresis. (Spirochäte des Paralytikergehirns.) E. Forster and E. Tomaszewski.
107 Delivery with a Slanting Pelvis. (Geburt bei schiefem Becken.) R. Jolly.
108 *Orthopedic Substitute After Resection of Ribs. (Orthopädischer Ersatz einer grossen Rippenlücke.) H. v. Baeyer.
109 *Treatment of Congenital Dislocation of the Hip Joint. (Angeborene Hüftgelenksverrenkung.) Gaugele.
110 *Revival of the Asphyxiated Newly-Born. (Behandlung des Scheintodes bei Neugeborenen.) C. Sakaki.
111 *Necessity for Facilities for Research on the Laws of Heredity. (Organisation und Aufgaben eines Reichsinstitutes für Familienforschung und Vererbungslehre.) R. Sommer.

100. **Incarceration of Gravid Uterus.**—Jung warns that no attempt should be made to straighten the uterus until after the bladder has been emptied. If it proves impossible to introduce a catheter, we must not hesitate to puncture the bladder above the symphysis. The rectum must also be cleared out. Then the uterus must be straightened; it helps sometimes to draw down the cervix with forceps to leave more room above. The knee-chest position may help or general anesthesia may be necessary. During this it may be possible to break up adhesions. Once corrected, a pessary should always be introduced to keep things in place, removing it at the fifth month. If no pessary that fits is at hand the patient should lie on her side until one can be obtained. Morphin may also aid in quieting the uterus and warding off danger of abortion from maneuvers. Gangrene of the bladder is always extremely serious; after recovery the bladder generally shrivels and entails great suffering. Incarceration of the gravid uterus is liable to recur and women who have once had it should be warned to seek medical aid at once at a new pregnancy. The best plan is to shorten the ligaments after the puerperium to prevent recurrence later.

101. **Operative Treatment of Empyema.**—Wilms relates a number of instances in which his method of resection of ribs close to the spine and sternum, causing the chest wall to fall in, closed up cavities and led to the prompt healing of old tuberculous pleural effusions and empyemas. No loss of muscle functioning followed. This technic is peculiarly advantageous for old tuberculous processes and it does not expose them to secondary infection as with other technics. The resection can be done at several sittings, and it may be necessary to resect from the eleventh to the first ribs close to the spine, and eventually from the first to the seventh ribs close to the sternum. He thinks that the increasing application of artificial pneumothorax is bound to increase the numbers of empyemas, as an effusion is common after it and this effusion is liable to become infected or the lung be unable to expand from compression by it. In such cases he declares that his technic offers the best prospects of success.

102. **Pneumonia in Infants.**—Czerny calls attention to the marked decrease in the number of cases of what he calls hypostatic paravertebral pneumonia. This is the more remarkable as bronchitis and other forms of pneumonia show no decrease in frequency. He explains it by the progress realized in recent years in infant feeding, so that the diaphragm is neither pushed up by meteorism nor allowed to sag unduly by abnormally low intra-abdominal pressure. As the diaphragm behaves normally there is no occasion for the paravertebral hypostatic conditions to develop which are liable to entail complications on the part of the lungs.

103. **Bacteriology of Friedmann's Remedy.**—Summarized in the Berlin Letter, April 25, p. 1343.

108. **Orthopedic Appliance for Defect in Ribs.**—Baeyer's patient was a man whose lung was unable to expand on account of the sinking in of the chest wall where all the ribs had been cut out five years before on account of empyema. His dyspnea was extreme at the slightest exertion. A solid pad was made to extend from the axilla to the waist covered with soft kid and fitting tight to the chest wall during expiration. This prevented the chest wall from sinking in during inspiration, and all trouble was at an end at once. The article is illustrated.

109. **Congenital Dislocation of the Hip-Joint.**—Gaugele says that he has never had a failure since he has laid special stress on adapting the after-treatment to the rigidity of the joint, and aiming to make it the artificial prolongation of spontaneous correction, always bearing in mind that the shriveling of the capsule is what holds the head in place; the acetabulum does not grow any deeper. He gives an illustrated description of the pelvis and thigh appliance with which he accomplishes this, adjusting it himself from time to time under control of the Roentgen rays. In two and a half years to date the head has not slipped out of place in any of the fifty-two children thus treated.

110. **Asphyxia of the New Born.**—Sakaki recalls that an air pump works much less powerfully when the piston is pushed in slowly, and he deduces from this that the ordinary measures to revive the newly born are less effectual than they might be if a faster tempo were used. Another fact to which he calls attention is that if considerable water is poured on a capillary pipet, air bubbles form and very little water gets into the pipet unless it is well shaken. On these premises he applies a method of reviving the asphyxiated newly born which has never failed him in long years of experience. He holds the child facing him, with his forefingers in the child's axillae, entering from the back. His thumbs meet on the front of the child's throat and prevent its head drooping too far forward. The other three fingers of each hand are applied to the back of the chest. The child thus held firmly with its arms flexed and pressed against its sides, is shaken from the wrists, not hard but rapidly, 120 to 150 times a minute. In a few seconds the air can be heard entering the child's air passages. Then the child is suspended by the feet and the mucus runs out of its mouth and nose. After a few seconds the whole procedure is repeated, unless the child has begun to breathe naturally. Sakaki says that it is simple and easy and can be done before the umbilical cord is cut, and that it is the only way to get air into passages clogged with secretions. The objection that foreign-body pneumonia may be brought on by the procedure, he meets with the assertion that it is better to have a living child, even if it has to be carried through pneumonia later, than a dead child free from pneumonia.

111. **Research on Heredity.**—Sommer comments on the ever increasing sociologic importance of psychiatry and urges that provisions should be made to collect data in regard to forensic psychiatry and the laws of heredity. He suggests that the public health service for the German empire should have some section devoted to these subjects and to psychic hygiene in the widest sense, or a central institution might be founded for the purpose. Among the questions to be thus studied are the effects of intermarriage between blood relations; the regeneration in later generations of inherited morbid properties; congenital feeble-mindedness; connection between the tuberculous taint or syphilis in certain families and constitutional inferiority and degeneracy, with allied questions which can be solved only by industriously compiling and comparing extensive data on these subjects. He has got out a question blank for study of the heredity after intermarriage between blood relations and offers to send it to those who will help in compiling data in this line; address Prof. R. Sommer, Giessen. (A news item in our exchange states that an experiment station for study of heredity in plants and animals will soon be opened at Berlin in connection with the Agricultural College.)

Deutsche Zeitschrift für Chirurgie, Leipsic

March, CXXVII, Nos. 3-4, pp. 209-414

112 Surgical Anatomy of the Exterior of the Base of the Skull. (Basis cranii externa.) A. W. Starkoff.
113 *Experiences at the Balkan Wars. (Kriegschirurgische Erfahrungen 1912-1913.) A. Dilger and A. W. Meyer.
114 Angiosclerotic Changes in the Bones. (Eine noch wenig bekannte angiosclerotische Knochenveränderung.) A. Serra.
115 Experimental Research on Chronic Granulating Osteomyelitis. F. Rost.
116 Cysts in the External Ear. (Knorpelcysten der Ohrmuschel.) Junkel.

113. **From the Balkan Wars.**—Dilger and Meyer here review their experiences on the battlefield, their 154-page report being profusely illustrated. They noticed that small bullet wounds healed as a rule without infection, regardless of whether they were dressed or not, while extensive injuries usually became infected even when the first-aid dressing had been faultlessly applied. They insist that it is far more important to apply measures for immediate fixation of fractures than to waste time dressing small wounds. With a gunshot fracture the bleeding generally stops as soon as the fracture is splinted, and the temperature often goes down in case the wound is infected. Better results were obtained in the febrile cases by waiting a day or two before incising, unless there was a large accumulation of pus.

Medizinische Klinik, Berlin

March 15, X, No. 11, pp. 443-486

117 *Laceration of the Uterus during Delivery. (Zerreissung der Gebärmutter unter der Geburt.) M. Henkel.
118 Meat Poisoning. (Bedeutung der Fleischvergiftung.) Konrich.
119 Serodiagnosis of Pregnancy. (Umfrage.) Zweifel, Veit, Bumm and others.
120 Copper in Treatment of Surgical Tuberculosis. (Kupfertherapie bei äusserer Tuberkulose.) K. Stern.
121 Vital Staining and Deposits of Cholesterol in the Organism. (Vitale Färbung und Cholesterinspeicherung im Organismus.) N. Anitschkow.
122 Auscultation-Percussion by the Mouth. (Die oralauskultatorische Perkussion.) W. A. Sokolow.
123 Volvulus in a Hernia. A. Landsberger.

117. **Rupture of the Uterus During Delivery.**—Henkel says that about 87 per cent. of the lacerations occur in the lower segment, and about twice as often on the left side as on the right, and very rarely in the rear. Spontaneous ruptures are the more serious as they generally run across, while traumatic lacerations are usually lengthwise of the uterus. In 95 per cent. of the cases the women have borne other children; preceding twin delivery, hydramnion or hydrocephalus may have strained the uterus wall and predispose it to lacerate. The mortality up to 1895 averaged 70 per cent. and 45 per cent. even in 1901, but nowadays the mortality has been reduced to 18 or 20 per cent. The extent of the laceration is not proportionate to the extent of the hemorrhage, and even when there is extensive hemorrhage it may not appear externally. This is the main point, namely, to bear in mind the possibility of the uterus having torn when apparently all is going well. The only way to be certain is to feel inside the uterus after delivery is complete, and convince one's self that there has been no laceration. This is especially imperative when delivery has been difficult, with disproportion between the size of the child and the birth passages.

The lower segment may have been stretched beyond what it can bear and yet cause no subjective symptoms, but palpation during a labor pause causes pain in it. Tenderness in the round ligaments is also instructive. After the uterus tears, the parts of the fetus above the pelvic inlet become abnormally movable; the contraction ring has vanished and there is no further tenderness in the previously sensitive stretched lower segment. The labor contractions generally stop altogether when the uterus tears. The rupture once diagnosed, the uterus must be emptied at once without regard for the child; if cesarean section is done, the general anesthesia must be profound. Version and forceps are liable to increase the rupture. If the head of the child has passed through the tear, it acts as a tampon and should not be disturbed; ergot may be given to make the uterus contract around the head. Ergot is also useful when the child has been safely delivered. But the reverse should be the aim when the rupture is merely impending and the woman is to be sent to the hospital. Here everything should be done to relax the uterus and keep it relaxed, morphin in large doses, and if labor contractions start up again, more morphin. Treatment can be only by laparotomy as this alone permits oversight of the true conditions. Tubal sterilization or hysterectomy should never be omitted after rupture of the uterus. The general practitioner's task is to ward off laceration of the uterus and to detect it when it occurs, and then have the woman taken at once to the hospital for operative measures. Five patients have been treated recently by Henkel on these principles, and all were saved although some already showed signs of peritonitis.

Münchener medizinische Wochenschrift

March 3, LI, No. 13, pp. 689-744

124 *Pregnancy Skin Reaction. (Neue Hautreaktion in der Schwangerschaft.) E. Engelhorn and H. Wintz.
125 Sacral Anesthesia; Epidural Injections. E. Zweifel.
126 *Prophylaxis and Treatment of Pellagra on Basis of Vitamin Theory. C. Funk.
127 Differential Cultivation of True and False Diphtheria Bacilli. M. af Heurlin.
128 No Apparent Basis for Serodiagnosis of Epilepsy. W. Mayer.
129 *Restoration of Nose. (Zur totalen Rhinoneoplastik.) J. Joseph.
130 Lengthening of Tendons by Letting Them Work Down of Themselves. (Sehnenverlängerung durch das Rutschenlassen.) O. Vulpius.
131 Microscopic Control of Prostitutes. (Was leistet die mikroskopische Sekretuntersuchung bei der Kontrolle der Prostituierten für die allgemeine Prophylaxe der Gonorrhoe.) M. Müller.
132 Increasing Number of Crimes under the Influence of Alcohol among the Young. (Die Alkoholkriminalität der Jugend Bayerns.) K. Rupprecht.
133 Head Held Slanting with Process in Posterior Cranial Fossa. (Ursache einer bei raumbeschränkenden Vorgängen in der hinteren Schädelgrube beobachteten eigentümlichen Schiefstellung des Kopfes.) O. Muck.
134 Treatment of Delirium Tremens. Scharnke.
135 Attempt at Suicide with Seven Times the Maximal Dose of Digalen; Slight and Brief Intoxication. E. Krönig.

124. **The Placentin Skin Reaction in Pregnancy.**—Abderhalden and others have now established beyond question that an alien albumin circulates in the blood of the pregnant woman against which the organism elaborates a protective ferment. Engelhorn and Wintz here announce that this specific sensitization of the organism can be rendered manifest, in the same way as the tuberculin and luetin reactions, by inoculation of the skin with the alien albumin. They assumed that it was derived from placenta tissue and hence used a placenta extract, placentin, for the test. In seventy pregnant women a reaction in the skin was constantly obtained while there was no reaction in fifty-three men and children and non-pregnant women. The only contradictory finding was a positive reaction in one child of 6 with bladder disease. The reaction became positive in pregnant women from the seventh week on and persisted for three or four days after delivery.

126. **Prophylaxis and Treatment of Pellagra.**—Funk calls attention anew to the recent experiences in Rhodesia which showed that when whole cornmeal was used there was no pellagra while it was liable to develop when bolted meal was used. Nightingale's experience with 1,210 cases amply confirmed this although he calls the cases "zeism," not venturing to list them as pellagra cases. Funk expatiates on the importance of avoiding bolted meal, using the whole grain, and using more potatoes, stating that in the potato zone pellagra is unknown. Treatment should be a diet rich in vitamins, supplemented perhaps by yeast preparations and cod liver oil, which are exceptionally rich in vitamins.

129. **Restoration of the Nose.**—Joseph gives a profusely illustrated description of his method of making a new nose. It is a modification of the Italian method, a pedunculated, somewhat oval flap from the arm growing into the nose region. After it has taken root all around and been severed from the arm, he builds up a support beneath with two prism-shaped strips of bone taken from the tibia, one forming the septum, the other the straight profile of the nose. The photographs of the eight cases described show a remarkably good outcome.

Therapeutische Monatshefte, Berlin

April, XXVIII, No. 4, pp. 229-308

136 *Principles and Technic of Organotherapy. W. Weiland.
137 Radium Treatment of Alveolar Pyorrhea. H. Euler.
138 *Treatment on Physiologic Bases of Gastric Ulcer and Allied Conditions. (Einige physiologische Gesichtspunkte in der Behandlung des Magengeschwüres und verwandter Zustände.) H. Januschke.
139 Magnesium Sulphate in Tetanus. F. Mielke.
140 *Protected Names of Proprietaries. (Zum Wortzeichenschutz von Arzneimitteln.) W. Heubner.
141 Criminal Prescribing of Morphin. (Fahrlässige Morphinverordnung.) W. Heubner.

136. **Present Status of Organotherapy.**—Weiland reviews the history, bases and mode of application of organ extracts or fresh tissues, advising the general practitioner to give the preference to the organ tissue, fresh or dried, administering it by the mouth as we know that—with the exception of epinephrin—the active substances are not destroyed in the gastro-intestinal tract. With this technic, also, there need be no fear of by-effects such as have followed sometimes intravenous injection. The principle should always be borne in mind never to give a substance of this kind which is capable of augmenting the functioning of an already morbidly functioning organ. What empiric experience has been groping for through the centuries has been placed on an exact and broad basis in recent years by experimental research. The trouble, however, is that when one ductless gland is diseased, others generally suffer with it. This is particularly the case, he affirms, in diabetes, so that it is folly to waste time, efforts and money on futile pancreas organotherapy in cases of supposed pancreas diabetes. But when study of the stools shows that fat and nitrogen are being eliminated in excess, unutilized, then pancreas extracts may have a favorable influence on chronic defective pancreas functioning. He says of hypophysis extract that it seems to have a tonic effect on the heart and vessels, similar to that of epinephrin, but without the by-effects of the latter, so that Falta recommends it for disturbances in the innervation of the vessels. It has also proved useful in asthma, in Weiland's experience. In speaking of ovarian organotherapy, he remarks that when a woman has had her ovaries removed or destroyed and had an ovary transplanted from another woman, any child born to her later must be the child of the other woman.

Transfusion of whole blood is a form of organotherapy of which he makes constant use, having found it of great service in pernicious and secondary anemia. The technic is simple and easy even for the general practitioner: 20 c.c. of blood is drawn from the distended ulnar vein of the donor and, using another needle, is injected immediately into the gluteal muscle of the patient. It acts possibly merely as a stimulant to the bone marrow, but the effect is such that he commends it for the widest adoption.

138. **Physiologic Bases for Treatment of Gastric Ulcer and Spasm.**—Januschke discusses the dietetic, hydrotherapeutic and medicinal treatment aiming to keep the stomach free from sensory irritations, to soothe it so there will be no spastic contracture, and to promote the circulation in the region. Among the measures suggested as liable to be beneficial are small, frequent meals; the more the patient "relishes" his food, the greater the secretion of gastric juice, which is what we have to contend with. The sooner the contents of the stomach are passed along, the less the irritation of the stomach mucosa; an isotonic salt solution is evacuated exceptionally rapidly. An 11 or 14 per thousand solution of sodium bicarbonate or a 15 or 20 per thousand of Carlsbad salt is equivalent to the isotonic 7 or 9 per thousand salt solution. Warm stomach contents are evacuated sooner than cold, and constipation is liable to have an inhibiting effect on stomach evacuation, showing the necessity of keeping the bowels open. Januschke explains with diagrams the mechanism of the benefit from atropin with gastric ulcer. He gives half an hour before each of the three meals 5 drops of a 1 per thousand solution of atropin sulphate, doubling or trebling the dose if it does not relieve, and reducing it if there are signs of intolerance. This dosage is equivalent to 0.0009 gm. of the drug daily, fractioned, and it can be increased to 0.003 gm. Children over 6 can take these doses, he says. The course has to be kept up for several weeks. His experience has confirmed that psychic influences may affect the motor as well as the secretory functioning of the stomach. Local application of heat to promote the circulation is extremely useful, but the atropin may render it unnecessary. Measures to tone up the general circulation are indispensable in some cases.

140. **Protected Names of Proprietaries.**—The Germans are discussing new legislation on the subject and a number of legal points are here brought out. Some recent court decisions in Germany are given which sustain the view that the protected name of a proprietary becomes sooner or later the commercial term for the article in question, regardless of by whom it is made. One court decision stated: "There is no other term to designate the substance in question except its trademark designation, and hence this name must be used for its commercial designation." The buyer must rely on the trademark of the manufacturer for the reliability of the product, not on its protected name. This decision of the highest court in the land is equivalent to the declaration that trademark names cannot be protected, as they have to serve for the generic commercial designation. It is stated further that in Germany during 1913, 1,600 applications were made for trademark names of drugs; 600 more than in the previous year. A number of new drug manufacturing establishments were also founded last year.

Therapie der Gegenwart, Berlin

April, L, No. 4, pp. 145-192

142 *Non-Operative Treatment of Tuberculous Lymph-Nodes in the Neck. (Haladrüsentuberkulose.) O. H. Petersen.
143 *The Flexible Gastroscope. (Zur Methodik der Gastroskopie.) M. Sussmann.
144 Serotherapy of Pregnancy Dermatoses. (Schwangerschaftsdermatosen.) F. Heimann.
145 Compresses that Do Not Require Changing. (Dauerumschläge.) F. Steiner.

142. **Tuberculous Lymph-Nodes in the Neck.**—Petersen says that in the very earliest days of roentgenotherapy it was applied to enlarged tuberculous cervical lymph-nodes but without much effect until improvement in technic and skill has now brought most excellent results. The swollen lymph-nodes retrogress without injury to the skin, so that the cosmetic outcome is ideal. Another advantage of the Roentgen rays over the knife is that they act on all the nodes, even those with incipient lesions, too minute to be clinically apparent. The beneficial action of the Roentgen ray in these cases is the best to its credit yet, and no more failures are being encountered. The young cells of the tuberculous tissue seem to be exceptionally sensitive to these rays, but the tubercle bacilli themselves do not seem to be directly affected. This is the weak point of the treatment; the bacilli may be merely walled in as in any old encapsulated cheesy process, and the infection may flare up again if occasion offers. The roentgenotherapy should be supplemented by all the general measures usually invoked, and the sittings should be planned to avoid cumulative action. He agrees with Iselin that a total of six full doses (Sabouraud) should be the limit for one course. He waits for a month between each sitting, and then suspends this treatment for several months. Improvement once started progresses even during suspension. There may be a local reaction, swelling and tenderness and even nausea and vomiting after the sitting, but these are comparatively slight and transient. When they occur, the dosage had better be reduced a little. Rollier accomplishes equally good results in his sunlight treatment in the Swiss mountains, but this is accessible only to a few while roentgenotherapy can be applied anywhere. Several typical cases are described in full with illustrations.

143. **Flexible Gastroscope.**—Sussmann's gastroscope has been described elsewhere. Here he only reiterates the indispensable direction that the gastroscope must be introduced with the patient lying on his right side; this overcomes the

curvature of the esophagus to the left where it passes through the diaphragm.

Wiener klinische Wochenschrift, Vienna

April 2, XXVII, No. 14, pp. 357-388

146 *Stereochemical Properties in Connection with Cancer. (Ueber Beziehungen sterischer Atomgruppierung zum Karzinom.) E. Freund and G. Kaminer.
147 *Alimentary Galactosuria as Sign of Liver Disease. J. Hatiegan.
148 Case of Transcortical Motor Aphasia with Paralysis and Inability to Read Correctly. A. Finzi.
149 Obsessions and Psychotherapy. (Die Zwangsvorstellungen und ihre psychische Therapie.) H. Kahane.
150 Balneotherapy and Skin Disease. G. Riehl.

146. **Stereochemistry and Cancer.**—Freund and Kaminer have been investigating the atom grouping in a number of stereo-isomeric acids since their discovery that an organic acid which they extracted from the intestine content had a specific action on cancer cells and cancer serum. They here announce that maleic acid and solutions of dextrin displayed this same action.

147. **Alimentary Galactosuria in Liver Disease.**—Hatiegan reviews what has been written on this subject, including Bauer's findings in 320 cases, and then reports his own experiences with 41 cases. The patients took 40 gm. of galactose in the morning, fasting, and the urine was examined every two hours afterward. The findings are tabulated. They harmonize with those reported by others, all testifying to the constant appearance of galactosuria in cases of catarrhal jaundice, with scarcely an exception. Quantitative estimation of the amount of galactose eliminated also throws light on other affections of the liver accompanied by gall-stones. There was no febrile reaction to the galactose. In the cases of catarrhal jaundice the amount of galactose in the urine ranged from 1.95 to 8.8 gm. while with cancer of the liver there was no galactosuria in seven cases and less than 1 per cent. in the five others with one exception in which it was 2.5 gm. This figure was never surpassed in all the other cases of various other liver affections and in the overwhelming majority there was only a fraction of 1 per cent. It is possible to obtain a quantitative estimation of the galactosuria by noting the smallest amount which is followed by elimination of galactose in the urine.

Zeitschrift für klinische Medizin, Berlin

LXXIX, Nos. 5-6, pp. 371-550. Last indexed Feb. 28, p. 738

151 Serial Roentgenoscopic Differential Diagnosis of Gastric and Duodenal Benign and Malignant Disease. L. G. Cole (N. Y.).
152 *Mode of Action of Dietetic Measures on the Behavior of the Sugar in the Blood in Diabetics. (In welcher Weise wirken Diätkuren auf das Verhalten des Blutzuckers bei Diabetikern.) L. Wolf and S. Gutmann.
153 Distribution of the Sugar in the Blood. (Verteilung des Blutzuckers auf Blutkörperchen und Blutplasma.) H. Tachau.
154 *Polycythemia and Liver Disease. (Polyglobulie und Lebererkrankung.) M. Mosse.
155 Digitalis Has an Elective Action on the Heart Muscle. (Digitalis und Muskulatur.) E. Reinike.
156 *Malignant Granuloma; Nine Cases. (Klinik und Pathologie der Lymphogranulomatosis.) O. Steiger.
157 Functional Diagnosis of Disease of the Kidneys. (Zur funktionellen Diagnostik interner Nierenerkrankungen.) Frenkel and Uhlmann.
158 Influence of Position of the Heart on the Height of the Peaks in the Electrocardiogram. (Einfluss der Herzlage auf die Grösse der Elektrokardiogrammzacke.) E. Egan.

152. **Effect of Dietetic Measures on the Sugar Content of the Blood in Diabetics.**—Wolf and Gutmann report the results of their study of thirty-five diabetics, including six with chronic nephritis. On a diet free from carbohydrates, the proportion of the sugar in the blood markedly decreased in the other twenty-nine, the amount of reduction usual proportional to the severity of the case. Four patients with the mildest form of diabetes had the sugar content of the blood reduced within normal range in this way. When carbohydrates were ingested, the sugar content in the blood increased and the more rapidly and with the greater intensity the severer the diabetes. When the sugar level peculiar to the case had been reached, no restriction of albumin (by vegetable-fat days) affected the sugar content, not even when the amount of sugar in the urine was remarkably reduced or the urine quite clear of sugar. Oatmeal days tended rather to increase the sugar content of the blood, if they affected it at all. The sugar content was found abnormally high in those who had died of coma. The six diabetics with chronic kidney disease always had an excess of sugar in the blood although their glycosuria was slight and could be banished by diet. The details of a number of cases, day by day, are tabulated for comparison and the work of others in this line is reviewed.

154. **Polycythemia and Liver Disease.**—Mosse reports a case analogous to a few on record in which polycythemia was accompanied by urobilin jaundice and enlarged spleen, and at necropsy the spleen was found gorged with blood; the red bone marrow showed hyperplasia, and the liver signs of cirrhosis. He thinks the liver affection must be regarded as secondary.

156. **Malignant Granuloma.**—Nearly sixty pages are devoted to this profusely illustrated study of the clinical and necropsy findings in nine cases of the Paltauf-Sternberg type of lymphogranulomatosis. The blood picture seems to be first a leukocytosis; in the florid stage the polymorphonuclear neutrophils predominate, and in the last stage there is pronounced lymphopeny. There does not seem to be any characteristic fever curve, but everything seems to indicate that lymphogranulomatosis is a chronic infectious process in the lymphatic system, displaying a malignant course in its uncontrollable progress. Syphilis and tuberculosis are the main causal factors; almost all the animals inoculated died of miliary tuberculosis. Analogous granuloma tissue developed in three guinea-pigs after intra-abdominal injection of a granuloma tissue suspension, along with the miliary tuberculosis. A number of facts were observed which suggest that the bovine tubercle bacilli are responsible for the disease. Tuberculin of human bacilli origin elicited no reaction in the clinical cases, but a positive reaction was obtained in the one case tested with tuberculin from bovine tubercle bacilli.

Zentralblatt für Chirurgie, Leipsic

April 4, XLI, No. 14, pp. 585-624

159 Advantages of the Physiologic Oblique Incision in the Epigastrium. P. Sick.
160 Artificial Inversion of the Testicle in Treatment of Varicocele. R. Frank.
161 *Disadvantages of Nail Extension. (Nachteile des Steinmann'schen Nagelextension.) P. Ewald.

161. **Nail Extension.**—Ewald states that serious disturbances followed in seven of the twenty-nine cases of fracture of the leg in which he applied extension dragging on nails driven into the bone on each side. The fracture healed ideally in every case, but on one patient with a compound fracture the holes left by the nails were the seat of recurring inflammation so that they did not heal up finally until two and one-half years after the operation. In the six other cases the nails had been driven in too close to the ankle—Steinmann insists on a distance of at least 2.5 cm. Lack of this precaution caused in one case painful ankylosis of all the joints in the ankle and foot, with severe atrophy of the bones. The nails had been driven in only 1 cm. above the ankle. After months of ineffectual measures the young man was fitted with a walking splint to relieve the joints, but there is still—after three and a half years—some painful ankylosis of the ankle. In other cases the nails seemed to have contributed to the production of a spur on the calcaneum.

Zentralblatt für Gynäkologie, Leipsic

April 4, XXXVIII, No. 14, pp. 505-544

162 The Prognosis in Puerperal Fever. Baeumer.
163 What Can Be Learned from External Examination during Delivery. (Leistungsfähigkeit der äusseren Untersuchung während der Geburt.) O. Hoehne.

Gazzetta degli Ospedali e delle Cliniche, Milan

XXXV, Nos. 36-39, pp. 377-416

164 Negative Results of Autoserotherapy in Hydrocele; Four Cases. M. Zannini.
165 Congenital Polycystic Tumors in the Neck. E. L. Piazza.
166 Vulvovaginitis in Children. L. Dozzi.
167 Intermittent Hydronephrosis from Kinking of the Ureter from a Single Kidney. A. Austoni.

Riforma Medica, Naples

March 21, XXX, No. 12, pp. 309-336

168 Production of Antibodies in Animals Treated with the Bacillus of Rhinoscleroma. R. Stanziale.
169 Research on the Venous Circulation in the Leg. (Sulla circolazione venosa dell' arto inferiore con vene normali e varicose.) V. Marcozzi.
170 The Neutrophils in Pulmonary Tuberculosis. P. Masenti.

March 28, No. 13, pp. 337-364

171 *Plague Bacilli Carriers. (Esistenza del bacillo pestoso nell' organismo senza sintomi clinici.) A. Ilvento and M. Mazzitelli.
172 *Viscosity of the Blood and the Blood Pressure. (Viscosimetria del sangue e pressione cardio-vascolare.) M. Bucco. Commenced in No. 12.

171. **Plague Bacilli Carrier.**—A young man was kept under surveillance at Tripoli because he had been living with another who had developed the cutaneous form of bubonic plague. The first young man was apparently healthy but the lymph-nodes in the groin and axillae were enlarged on both sides. Puncture of one of the lymph-nodes in the groin revealed plague bacilli. He was evidently a healthy bacillus-carrier and as the foci did not communicate with the exterior he might be called a carrier with closed foci. The infection in this case probably acted as a vaccine, rendering the bearer immune, and such cases are liable to occur in any epidemic of plague.

172. **Viscosity of the Blood and the Blood-Pressure.**—Bucco has been studying on nineteen patients both the viscosity of the blood and the blood-pressure; the latter was abnormally high in all but two. He was unable to detect any special connection between the viscosity and the blood-pressure except that when the pressure was low the viscosity was generally low also. He concludes that to date there have been no laws discovered which render the parallel study of the viscosity and pressure of any special moment for differential diagnosis.

Rivista Ospedaliera, Rome

March 15, IV, No. 5, pp. 221-268

173 *Quantitative Estimation of Urea. (Nuovo ureometro di precisione.) F. Olivieri.

173. **Improved Ureometer.**—Olivieri states that at the Rome university laboratory such extensive use is made of Ambard's "uremic constant," that is, the relative proportion between the amount of urea in the urine and in the blood, that it was found necessary to improve on the ureometers in vogue. He gives an illustrated description of three forms of the instrument he devised to overcome the difficulties of those previously used. His ureometer is maintained at a constant temperature by being immersed in water. There is no rubber used, as this deteriorates rapidly and requires constant surveillance to avoid error. Another feature of his instrument is that the tube branches so that it can be read without letting out the water. The reagent is the usual sodium hypobromite solution. The findings he says can be relied on for precision and constancy and materially facilitate the functional tests of the kidney by the Ambard method. (Described in THE JOURNAL, March 7, 1914, p. 813.)

Semana Medica, Buenos Aires

February 26, XXI, No. 9, pp. 477-532

174 Technic for Serodiagnosis of Pregnancy. (Procedimiento de Abderhalden para el diagnostico del embarazo.) M. Beatti.
175 Medicine in Spain in the Early Eighteenth Century. (Aspecto medico de la vida, obras y trabajos de Torres Villarroel.) S. V. de Castro.
176 Subtotal Abdominal Hysterectomy for Fibromas or Disease of Ovaries or Tubes. C. T. Carvallo.
177 Platinum Powder Best Means to Bring Out Invisible Finger Prints. (Sobre revelacion y fijacion de huellas dactillares invisibles.) A. Lecha-Marzo.
178 Psychasthenia. (El concepto de la psicastenia.) L. Schneyder.

March 12, No. 11, pp. 585-636

179 *Pubiotomy for Primiparae. J. A. Gabastou.
180 Improved Technic for Cultivating the Gonococcus. (Nuevo medio de cultivo del gonococo.) E. M. Gache.
181 Uterine Cancer. P. S. Mimbela.
182 Evolution in the Vegetable Kingdom. (Nuevas ideas sobre la evolucion del reino vegetal.) V. Delfino.
183 Predetermination of Sex. (El determinismo del sexo y la astrologia.) J. Regnault

179. **Pubiotomy.**—Gabastou reports twenty-seven pubiotomies done on primiparae in his service since 1905; two of the women died from the effects of the chloroform and two from septicemia, so that the mortality of the operations was about 7 per cent. All of the children were born alive except three, one succumbing to the effect of preceding efforts at extraction, one to prolapse of the cord, and the third to the long deliberation before the pubiotomy was attempted. The chief danger of the operation is that as the head emerges the soft parts, lacking the solid natural background, may tear through the vagina up toward the severed pubis. High age of the patient and the necessity for forceps delivery magnify this danger. Laceration occurred in fourteen of the twenty-seven women but it healed smoothly leaving no disturbance in all but two, who succumbed to sepsis. Both of these were infected from the start. One patient was left with a vesicovaginal fistula requiring another operation later. The urine showed that the bladder had been injured in four cases, but all healed under a retention catheter for a few days. His impressions on the whole are very favorable unless infection is already installed.

Pediatria, St. Petersburg

V, No. 10, pp. 237-316. Last indexed March 21, pp. 976

184 Set of Sixty Models of Infants' Stools. (Modelei dietskikh isprazhnenii.) D. A. Sokoloff.
185 Pathogenesis of Rachitis. V. O. Mochan.
186 Laryngostenosis. V. A. Bush.
187 Purpura in Children. A. Artamonoff. Commenced in No. 8.
188 What Is Needed for the Physical Development of Our Youth. E. E. Ivanoff.

Nos. 11-12, pp. 317-447

189 Composition of the Blood and Body in General of Children in Relation to Nutrition and Weight. A. O. Karnitzky.
190 *Diagnosis of Brain Tumors in Children. I. V. Levich.
191 Familial Myxedema; Thyroid Grafting; One Case. V. N. Vorobieff and V. A. Perinoff.
192 Three Cases of Myxedema in One Family. N. A. G. Vakar.
193 Metrorrhagia of the Newly Born. S. K. Gogitidze.
194 Infant Welfare Work in Russia. M. Bezbokaya.

190. **Brain Tumors in Children.**—The necropsy in the first case confirmed the tuberculous nature of the tumor, surmised from the coexisting tuberculous lesions elsewhere. But conditions in the second child offered a prospect for an operative cure, and the tumor proved to be a hemangioma in the cerebellum. The patient was a girl of 9 suffering from headache and vomiting with increasing difficulty in walking and in vision. When she attempted to walk alone she fell forward, and toward the left side. The left leg was weaker than the right; the tendon reflexes stronger on the left side; the pupil reflexes were abolished and there was no perception of light. The pains were located in the occipital region and there was marked nystagmus and paresis of the left facial nerve. The mind was not affected, and the child seemed normal otherwise. There was no history of syphilis or tuberculosis and the rapid development of the trouble suggested a sarcoma. Four months after the operation the child could walk without aid; there is some perception of light and the pupil reflexes have returned to some extent.

St. Petersburger medizinische Zeitschrift

March 15, XXXIX, No. 6, pp. 73-83

195 Gynecologic Peritonitis. (Pelvioperitonitis exsudativa.) L. von Lingen.
196 *Occurrence and Course of Blood Diseases. (Sog. Blutkrankheiten.) O. Moritz.

196. **Blood Diseases.**—Moritz states that in 7 of his 31 cases of pernicious anemia the bothriocephalus was responsible and one patient died before the helminths could be expelled; twenty-two heads were found in his bowel. All in this group had fever, systolic murmurs and retinal hemorrhages. In 4 other men and 4 women the anemia was apparently of the pernicious type but it had followed chronic and severe genital or hemorrhoidal hemorrhages; these too, all had fever, most of them also achylia, edema and enlargement of the liver. In the elderly this picture may suggest heart disease. Moritz made this blunder in one case and treated an elderly man with edema, heart murmurs and

dyspnea, on the mistaken assumption of myocarditis for several months, and finally sent him to Kissingen for a course of treatment, before the idea of examining the blood occurred to him. This altered the diagnosis and under a four-months' course of treatment with repose, dieting and arsenic a complete cure was realized. In 2 other cases of pernicious anemia malaria could be incriminated; the interval since the malaria was fifteen years and one year. Both had fever but no malaria germs could be discovered; one had paroxysmal hemoglobinuria and both had achylia and enlarged spleens. The reds numbered 1.7 and 1.3 millions, neutrophils 59 and 69 per cent. In 8 other cases no cause for the pernicious anemia could be found except lack of proper food and ventilation. Two were materially improved and regained their earning capacity for twelve or eighteen months, but all in this group died in the course of two months up to three years. There was a history of syphilis in 2 twenty and eight years before. Achylia was pronounced in all this group.

The constancy of achylia in all his cases has convinced Moritz that insufficiency of the digestive tract is the basis for pernicious anemia. Fatty degeneration of the liver and hyperplasia of the spleen were found invariably at the necropsies. In 4 other cases young men succumbed to a fulminating acute anemia, some form of infection having evidently induced a hemolytic sepsis. One tabetic patient developed pernicious anemia. Moritz knows of only one case on record in which a young man with severe anemia after recent syphilis was completely cured with arsenic and calomel. One of the 8 patients with severe myeloid leukemia improved remarkably after he had treated himself à la Baunscheidt, a large number of superficial abscesses developed at the points of the multiple punctures of the skin.

All his chronic myeloid and 14 lymphatic leukemia patients improved under treatment, but the blood picture never returned to normal. One elderly patient with lymphocyte leukemia for two years was restored to clinical health under Roentgen treatment and the improvement has persisted three years to date. The leukocyte count in another was restored to normal but the patient died in an acute exacerbation. One elderly man had numerous very much enlarged glands and he was given Roentgen treatment for five or ten minutes a day, but the total in eleven days was not much over one erythem dose. No change was noticed until suddenly all the glands subsided rapidly in size, and fever and diarrhea set in, fatal in three days. With myeloid leukemia such mishaps are less to be feared. Benzol in 3 cases was followed by improvement but no cure was realized with any measures in any case of leukemia. All his 5 patients with Hodgkin's disease died; a lymphosarcoma was a necropsy surprise in one case, the patient the father of one of the young men with acute leukemia. In his 4 cases of Banti's disease, in 2 the spleen rapidly subsided in size after a severe intestinal hemorrhage. Extensive varices below the umbilicus were a marked feature of one of these cases. His experience suggests further a familial element in pernicious anemia and that every effort should be made to cure mild cases of anemia and ward off the pernicious form.

Norsk Magazin for Lægevidenskaben, Christiania

April, LXXV, No. 4, pp. 369-504

197 *Importance of Daily Physiologic Control during Training for Athletics. (Betydningen av anatomisk-fysiologiske undersøkelser av idrætsmænd.) P. Torgersen.

198 The Leukocyte Curve, etc., with Appendicitis. (Appendicitens patologi.) S. Widerøe.

197. **Anatomic-Physiologic Control in Athletics.**—Torgersen examined repeatedly 200 athletes, some of them world champions—a total of nearly 600 examinations, besides 1,200 examinations of members of a rowing crew. All his findings confirm anew the absolute necessity for skillful daily medical examination during training. There have been hitherto no standards to go by, and the tables and photographs here presented aim to supply this lack. A record should be kept of each individual, with the physical measurements, and findings in heart and lungs, kidneys, blood-pressure before and after exercise, and vital capacity alone and proportional to the weight. One champion athlete had 71.8 c.c. vital capacity per kilogram of weight. His nearest competitors had only 68.1 and 64.7 c.c., respectively. The marathon runner with legs that measured 84.1 cm. won over those that measured 83 or 82.6. The marathon runners examined measured from 171 to 158.5 cm. and weighed from 65 to 49.5 kilograms, with a vital capacity of 4,500 to 3,600 c.c., much above the average.

The blood-pressure rises after brief exertion but then it falls, and the drop is earlier and lower the weaker the constitution and the less perfect the training. The younger set react with the most marked extremes. The appearance of albumin in the urine was always accompanied by an exceptionally low drop in the blood-pressure, accelerated pulse, great loss of weight and subjective ill feeling, all pointing to a disproportion between the effort and the physical capacity at the time.

One of his tables gives the average of 1,200 examinations of a rowing crew, and he urges others to keep records along the same lines, recording for each the weight the first and last day of training; the highest and lowest weight; the highest and lowest change in weight after rowing, and the average. Also the lowest and highest and average blood-pressure before and after the practice; the greatest, smallest and average drop, and the six similar findings for the pulse. His average for four juniors and four seniors was respectively: loss of weight after rowing practice, 656 and 527 gm.; blood-pressure before, 107 and 110; blood-pressure afterward, 96 and 103; drop in blood-pressure after rowing, 11 and 7; pulse before, 74 and 64; pulse afterward, 88 and 76; The range of loss of weight after a rowing course was, among the juniors, from 1,000 to 1,350 gm.; among the seniors, from 200 to 1,000. By examining in this way every day during training, a complete oversight of the physical equipment can thus be maintained, and the work be graduated to the physical capacity at the time. This is the only way, he insists, to get the best results from athletics for every one interested and avoid irreparable injury to those whose ambition outstrips their body.

Ugeskrift for Læger, Copenhagen

March 26, LXXVI, No. 13, pp. 540-596

199 Fluctuations in Weight of the Tuberculous during Sanatorium Treatment. (Vægtsvingninger hos Brystsyge under Sanatoriebehandlingen.) N. J. Strangaard.

April 2, No. 14, pp. 597-634

200 *The Balance-Sheet of Sanatorium Treatment in Denmark. (De paa Silkeborg Folkesanatorium opnaaede blivende Resultate.) S. Bang.

200. **Sanatorium Treatment of Pulmonary Tuberculosis.**—What has been accomplished by the public sanatoriums in Denmark during the thirteen years since they were founded is the question which Bang seeks to answer. He says that conditions are so different for men and for women that they should be considered separately. Five years after discharge from two sanatoriums, 38.9 and 36.6 per cent. of 731 and 1,304 men had full earning capacity; 44.9 and 31.6 per cent. had died. Classifying according to the stage of tuberculosis, it is surprising to find full earning capacity in 29 and 41.5 per cent. of those in the second stage, and in 10 and 15 per cent. of those in the third stage. He thinks that these figures show that in many cases an old stationary tuberculous affection was accidentally discovered and its torpid nature not recognized. The patient was sent to the sanatorium but the fact that the process kept mild and torpid should not be credited to the sanatorium, as the case would have progressed favorably with or without treatment. Going over the records of the cured cases one by one, he has found extremely few in which one could say that without the sanatorium treatment the course would have been unfavorable. Mere training in hygiene and prophylaxis does not require many weeks, so that he thinks a good part of the work done by the sanatoriums was wasted from lack of discrimination in selecting the persons who actually require and will benefit by the course of treatment.